Canon Digital Imaging Product

SERVICE MANUAL

PowerShot A100/A200

Digital Camera

English Edition

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1 GENERAL DESCRIPTION OF PRODUCT

2 TECHNICAL DESCRIPTION

3 REPAIR INSTRUCTION

4 PARTS CATALOG

5 DIAGRAMS

6 APPENDIX

Photo Products Service Administration Division
First Edition 2002

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, and repair of the products.

Corrections

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SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine CANON replacement parts.
   Especially critical parts in the power circuit block should not be replaced with other makes.
   Critical parts are marked with ⚠ in the schematic diagrams.
2. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
4. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
   4-1 Leakage Current Cold Check
      1) Unplug the AC cord and connect a jumper between the two prongs on the plug.
      2) Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ. When the exposed metal does not have a return path to the chassis, the reading must be ∞.
   4-2 Leakage Current Hot Check
      1) Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
      2) Connect a 1.5KΩ 10 watt resistor, paralleled by 0.15μF capacitor, between each exposed metallic parts on the unit and a good earth ground such as a water pipe, as shown in the figure below.
      3) Use an AC voltmeter, with 1000Ω/volt or more sensitivity, to measure the potential across the resistor.
      4) Check all exposed metallic parts of the cover (Cable connection, Handle bracket, metallic cabinet. Screwheads, Metallic overlays, etc), and measure the voltage at each point.
      5) Reverse the AC plug in the AC outlet and repeat each of the above measurements.
      6) The potential at any point should not exceed 0.75V RMS.
         A leakage current tester (FLUKE MODEL : 8000A equivalent) may be used to make the hot checks.
         Leakage current must not exceed 0.5 milliamp.
         In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and corrective action must be taken before returning the instrument to the customer.

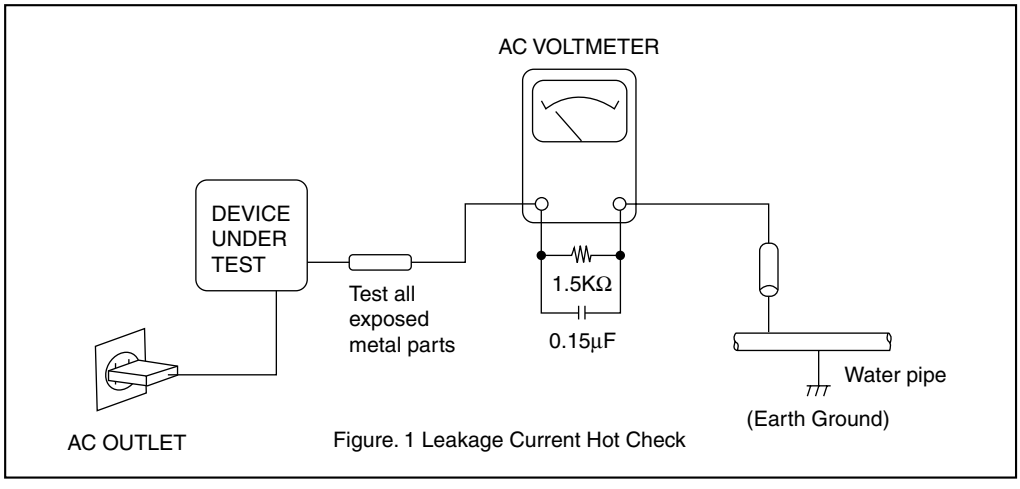

Figure. 1 Leakage Current Hot Check

CHAPTER 1. GENERAL DESCRIPTION OF PRODUCT

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1 Development Background

1-1 Development Objectives

As of November 2001, Canon is responding to a wide range of customer demands with the six series in our line: the single-lens-reflex EOS 1D and EOS D30, the PowerShot Pro90 IS with 10x zoom lens, the PowerShot G2 with high image quality and advanced features, the highly compact PowerShot S40/S30, the ultra compact IXY DIGITAL 300/200 and the basic value PowerShot A20/A10.

However, as digital cameras are proliferating rapidly recently, we believe there are many potential consumers who want to enjoy the convenience of digital photography, but who consider the $300 to $400 class such as the PowerShot A20/A10 too expensive, and 'toy' cameras in the $100 and under class to be inadequate. We therefore believe that we can enhance our market share by providing a low-end Canon digital camera for these consumers, and we are undertaking development of new digital cameras to respond to these demands.

This means that first-time users of digital cameras, and those who mainly want ease of use, are the main targets for the low-end class (2-megapixel) PowerShot A200 and (1.3-megapixel) PowerShot A100, which will be distinguished from other brands by a combination of high-end features such as primary filters plus a new image engine, movie recording and Camera Direct features, and basic features such as a fixed-focus lens and simple operation aimed at this class of users.

For Digital Camera Beginners
Beyond the Class
• Full Features/Operation Ease
• High Image Quality
• High Grade Design
For Casual Digital Camera Users

1-2 Product Concept

Because these models are aimed at users purchasing a digital camera for the first time, who want to enjoy convenient digital photography economically, the PowerShot A200/A100 will be priced as low as possible, while providing the same capabilities and features as higher-end models as much as possible. The product concept is therefore "Excelling Classes of Advanced Features with Convenient Operation and High Image Quality with High Grade Design."

Also, despite the low price of the PowerShot A200/A100, we propose to foster a new culture of convenient photo printing for the class of digital camera users who use a PC monitor or TV to display digital photographs, by providing the Direct Print feature compatible with the CP-10 Card Photo Printer and the CP-100 Photo Printer, to enable simple credit card or postcard size photo printing at home.

Full Features / Operation Ease

N - Photo Effect Modes (Vivid color, Neutral color, Low Sharpening, Sepia and Black & White) are provided
N - Direct Print Function for dedicated printers (CP-10 Card Photo Printer and CP-100 Photo Printer)
N - Shutter speed is allowed from 1 to 1/2000 sec.
N - Enabling for On/Off selection of AF-assist Beam
N - Macro Function focuses down to 5 cm
N - Use of widely available size AA battery (2) (primary: alkaline, secondary: NiCd/NiMH)
N - One-click open/close lens cover (dual use for switching between still and movie)
N - Inverted Galilean-type optical viewfinder
N - Reset of all settings by one-touch operation
- Movie recording and playback (selectable pixel size from QVGA and Q²VGA)
- AF Frame (3-point) auto selection (AiAF) and center single-point selection (AF)
N - Magnified playback for convenient image confirmation (from approx. 2x to 10x zoom)
- High continous shooting (approx. 3 images/sec. (PS A100) when LCD monitor is off)
- Eleven-language international GUI support
- Convenient operation using cross-configured buttons, with a new GUI
- Digital zoom function changes viewing angle continuously (4X:PS A200), (3.2X:PS 100)
- Stress free operation with 1.4 sec. interval shooting (OVF:PS A100)
- Built-in flash with four flashing modes
- Low-temperature, polysilicon 1.5-inch LCD monitor with power-saving backlight (approx.120k pixels)
- Total of nine image quality modes (3 recording pixels X 3 compression ratio)
- Rec.-review function (instant erase possible while reviewing)
- High-Speed image Transfer (during playback)
- High-Speed Image Transfer on USB Interface
- Self-Timer Photo Function

High Image Quality

- Primary color filters and signal processing algorithms to get the most of these features
N - High resolution 1/3.2-type 1.2 megapixel* CCD (PS A100), 1/3.2-type 2 megapixel* CCD (PS A200)
N - High-resolution fixed-focus F2.8 lens (35 mm equivalent: 39 mm)
- AF maintains focus at any distance
- Intelligent AE determines optimum exposure in all photographic situations
- High-precision white balance (Auto, plus five preset positions)
- Wide range of ISO-equivalent speed settings (Auto, ISO 50(A200)-64(A100)/100/200/400 equivalent)
- Noise reduction feature for high S/N
- Super Fine mode image quality comparable to that of RAW mode

** Camera effective pixels*

N *: New features equiped for new cameras which will be launched in spring 2002.(including improved existing features)*
The explanations of some features shown in gray letters are omitted in section 2.

High-grade Design

- 2:1 sideways layout

N - Graphical symbols at the top of the screen show major functions at a glance

System Accessory / Application Software

N - Waterproof case submersible to 30m

N - Compact power adapter for power supply

N - Full featured application softwares

Canon Image Gateway* compliance for image upload, album creation, on-line photo printing, etc*.
ZoomBrowser EX 3.3/3.4 (Win)/ImageBrowser 2.3 (Mac) featuring improved ease of operation
PhotoRecord 1.4 (Win) for easy layout and printing of pictures
PhotoStitch 3.1 for creating precise panoramic pictures
RemoteCapture 2.4/2.5 for transfering images to the PC and capture control from the PC
Twain Driver 4.3/4.5 / WIA Driver 4.3/4.5 (Win)
Plug-in module 4.3/4.5 / USB mounter 1.4/1.6 (Mac)
RAW Image Converter 2.0 for processing RAW images
Apple QuickTime 5.0
CP-10 PrinterDriver.

** for Japanese market only*

N *: New features equiped for new cameras which will be launched in spring 2002. (including improved existing features)*

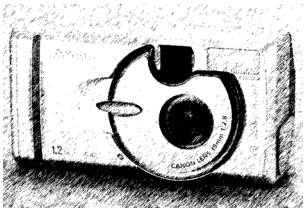
1-3 Design Concepts

● Freshness

A fresh and intimate appearance to suit an entry model that is easy for anyone to use
- "Bright Silver" color for a bright, cheerful appearance
- Exterior design using plastic skillfully for excellent handling
- Details utilizing different materials such as clear plastic, chrome and elastomer

● Sincerity

Basic ease of use camera intended to distinguish itself from the cheap "Toy Cameras"
- Adhering to the "box and circle" design
- Use of circle motif and lens cover with ingenious operation
- The tripod mounting hole and lens light share the same axis to suit panoramic photography
- Cross-configured buttons and control buttons for separate functions, with just enough for necessity
- Sideways layout for easy holding and inserting/removing from pocket or bag



1-4 PS A200/A100 Spec.Comparison

●PowerShot A200 & PowerShot A100

		PowerShot A200	PowerShot A100
CCD		1/3.2 type 2.0M (effective), about 2.1M (total)	1/3.2 type 1.2M (effective), about1.3M (total)
Color filter		Primary color filter	←
Lens(focal length 35mm film equivalent)		5mm (39mm) F2.8	←
Digital zoom		4×	3.2×
Optical view finder		Reverse Galilean	←
LCD monitor		1.5"low temp.p-si TFT	←
AF		Selectable 3 focusing points(AiAF) or 1(Center), with AF lock	←
Normal shooting range		20cm-∞	←
Macro shooting range		5-20cm	←
Shutter		Mechanical shutter + electronic shutter	←
Shutter speed		1-1/2000 sec	←
Light metering method		Evaluative	←
Exposure compensation		±2.0EV (1/3EV step)	←
ISO equivalent speed		Auto/50/100/200/400 At Auto setting, camera automatically adjusts speed according to ambient light, from ISO 64 to ISO 150 equivalent	Auto/64/100/200/400 At Auto setting, camera automatically adjusts speed according to ambient light, from ISO 64 to ISO 150 equivalent
Flash	Normal	20cm-2m	←
	Macro	5-20cm	←
White balance		Auto + Preset (5 positions)	←
Shooting mode		Auto/manual/stitch-assist/movie	←
Photo effect mode		Vivid/Neutral/Low sharpening/Sepia/BW	←
Continuous shooting		** images/s, Large/Fine LCD monitor off	3 images/s, Large/Fine LCD monitor off
Recording media		CF (Type I)	←
File format		DCF (Applied to Exif2.2),DPOF	←
Compression		SuperFine/Fine/Normal × L/M/S (9 patterns)	←
Recording pixels	L	1600×1200	1280×960
	M	1024×768	←
	S	640×480	←
Enlarged playback		about 2-10×	←
Direct print		possible (CP-10/CP-100)	←
Interface		USB	←
Battery		AA alkaline×2, AA NiMH×2, Compact power adapter	←
Dimensions(W×H×D)		110×58×36.6	←
Weight		Approx. 175g	←

2 Full Features

2-1 Advanced Features with Convenient Operation

● Photo Effect Modes (Vivid color, Neutral color, Low sharpening, and Sepia and Black & White) are provided

The color modes in the PowerShot G2 and PowerShot S40/S30 are included in the PowerShot A200/A100, with a Low sharpening mode added to the Vivid, Neutral, Sepia and Black & White modes, for a total of five modes. Also, for the PowerShot A200/A100, settings are made by special-purpose buttons instead of the mode dial setting system on the PowerShot G2 and PowerShot S40/S30. So, for example, color effects can be applied while making a movie. Table 2-1 shows the contents and effects.

Photo Effect	Description	Effect
Vivid color	Emphasizes contrast and color intensity	Produces a vivid and sharply-defined image
Neutral color	Reduces contrast and color intensity	Produces a subdued, plain image
Low sharpening	Reduces edge's emphasis	Produces a mild image
Sepia	Adds sepia toning to the color information	Creates an old-fashioned appearance
Black & White	Sets the color gain to "0," producing a black & white image	Produces a binary image with sharp contrast; used for text

Table 2-1 Contents and Effects of Photo Effect Setting

● Direct Print Function for dedicated printers (CP-10 Card Photo Printer and CP-100 Photo Printer)

The PowerShot A200/A100 includes the Direct Print function to enable high quality image printing by connecting with a special cable to Canon's CP-10 Card Photo Printer and CP-100 Photo Printer, newly developed for postcard size prints.
All printing operations are performed from the camera, including selection of frame/no-frame, date on/off, and adjusting the print area to match the image aspect ratio when creating card-size prints with no frames. The print area can be positioned by the upper side, center, or lower side (see Photo 2-1). With card-size printing, single stickers the size of the whole print sheet can be made, as well as eight stickers per card sheet.
A new image engine in the camera provides the high-speed color processing calculations for printing that are normally performed by the PC printer driver.

Photo 2-1 Printing area (Card size print)

● Shutter speeds is allowed from 1 to 1/2000 sec.

The PowerShot A200/A100 provides up to 1/2000 second shutter speed, the highest level available in this class of camera. Combining this speed with the F5.6 aperture setting provides photos with a maximum of EV 17, for photography in bright environments and minimal blurring of fast-moving objects.
Also, when the one-second slow shutter speed is combined with the F2.8 aperture setting, photos up to EV 3 can be taken, and in combination with the slow synchro flash mode, portrait photography with night background is possible.

●Enabling for On/Off selection of AF-assist beam

Many of the PowerShot series are equipped with an assist light to ensure proper autofocus when subject brightness is below a certain level. However, when photographing animals in a dark environment, they may react to the AF-assist beam by running away, preventing the desired photo from being taken in such situations.
The PowerShot A200/A100 therefore includes the capability to turn the AF-assist beam on and off, so that photos can be taken without it in situations like the above.

**When the surrounding light level is extremely low, the AF function may be unable to determine the proper focus. In such cases, the focus is fixed at a specific point.*

●Macro Function focuses down to 5 cm

The PowerShot A200/A100 includes a macro function that can photograph as close as 5 cm from the subject. The area of the photo is about 46 × 34 mm with the PowerShot A200, and about 47 × 35 mm with the PowerShot A100, which is the smallest area that can be photographed so far by any camera in the PowerShot/IXY series'.

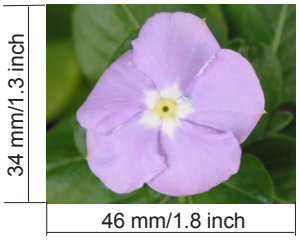


Photo 2-2 Max. capturing area

●Use of widely available size AA battery with (2) (primary: alkaline, secondary: NiCd/NiMH)

For convenience, the PowerShot A200/A100 can be powered by AA-size batteries. This convenience is especially significant because only two batteries are required instead of four, such as in the PowerShotA20/A10.
While the primary battery type is alkaline, NiCd[*2] or NiMH batteries may also be used, so the user can choose the best battery type according to the usage situation and environment.

**1 Manganese batteries cannot be used. Also, because alkaline batteries vary considerably among manufacturers, it is preferable to use brands recommonded by Canon.*
**2 NiCd battery capacity also varies considerable among manufacturers, so we do not recommend their use.*

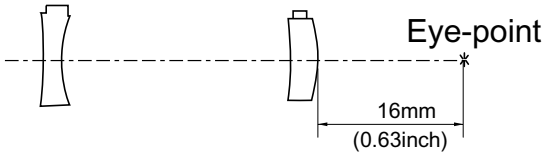
●One-click open/close lens cover (dual use for switching between still and movie)

The lens cover of the PowerShot A200/A100 can be opened and closed with one touch. Also, clever use of two springs (patent application planned) for the opening and closing mechanism provides convenient operation with minimum effort.
Additionally, a one-touch selection is provided to use the lens cover for switching between still images and movies.

●Inverted Galilean-type optical viewfinder

The reverse Galileo-type optical viewfinder system was adopted instead of the previous actual-image system. In the reverse Galileo-type system, the object lens is concave and the eyepiece is convex. The mechanism is simple (2 lenses), resulting in clear visibility and suitable compactness for a small camera.
Further, the eye relief being as long as 16 mm, excellent observation is also possible for people wearing eyeglasses.

Fig. 2-1 Optical viewfinder



●Reset of all settings by one-touch operation

The user can make many settings on the PowerShot A200/A100 LCD, and by pressing the menu button for five seconds, all settings can be canceled (returned to defaults).

● **Movie recording and playback (selectable pixel size from QVGA and Q²VGA)**

The PowerShot A200/A100 can record movies in QVGA (320 × 240 pixels) and Q²VGA (160 × 120 pixels) formats at 20 frames/second (15 f/s with the PowerShot A100). Up to ten seconds continuous recording is possible in QVGA, and up to 30 seconds in Q²VGA format.
The focus, exposure, WB and zoom settings are set at the start of recording, and are used until finished recording. While recording, the available time remaining is displayed on the LCD. The movie file format is Motion JPEG.

* *When the remaining capacity of the CF is less than the buffer memory capacity, recording can continue until the time determined by the remaining capacity of the CF.*

● **AF Frame (3-point) auto selection (AiAF) and center single-point selection (AF)**

The PowerShot A200/A100 incorporates both the 3-point AiAF method in which the camera automatically determines the proper AF frame from three measurement points, and the standard AF method that uses a single center point, so the user can select the best method depending on photographic conditions.

When AF frame is selected, frame turns on to green.

Photo 2-3 3-point AiAF

● **Magnified playback for convenient image review (from approx. 2x to 10x zoom)**

During playback, the displayed image can be magnified with continuous zoom from two to ten times. Also, by pressing the SET button when setting magnification, the magnification steps in three preset ratios of 2.5, 5 and 10x.
Magnified images can be scrolled to view a desired region.

Photo 2-4 Magnified playback

<Original>

<10X>

● **High speed continuous shooting (approx. 3 images/sec.(PA A100) when LCD monitor is off)**

The PowerShot A100 can shoot continuous pictures at up to approx. 3 images per second (PS A200 : approx. 2 images per second). The maximum number of continuous images that can be taken are 10 (PS A100), 7 (PS A200) in the Large/Fine mode.

● **Eleven-language international GUI support**

The LCD menu on the PowerShot A200/A100 supports eleven languages, expanding the number of native-language environments for the camera. The following languages are supported.

● **Convenient operation using cross-configured buttons, with a new GUI**

Despite the PowerShot A200/A100 being a low-priced model, a cross-configured button arrangement is adopted, resulting in very easy operation. The GUI layout is also simplified.

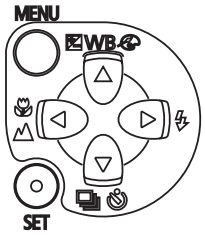


Fig. 2-2 Cross-configured buttons

●Digital zoom function changes viewing angle continuously (4X: PS A200), (3.2X: PS 100)

Although the PowerShot A200/A100 have a single-focus lens, the PowerShot A200 incorporates 4x digital zoom, and the PowerShot A100 incorporates 3.2x digital zoom. So the PowerShot A200 functions as a 39-156 mm zoom equivalent, and the PowerShot A100 as a 39-125 mm zoom equivalent (relative to a 35-mm film camera). However, because of the characteristics of digital zoom, image quality is degraded at the higher telephoto settings.
Even so, the actual effective pixels at the maximum telephoto limit is about 120k (OSGA-equivalent).

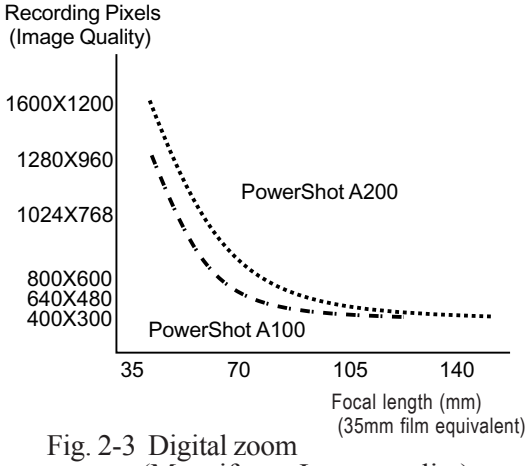


Fig. 2-3 Digital zoom
(Magnify vs. Image quality)

●Stress free operation with 1.4 sec. interval shooting (during OVF:PA A100)

The new image engine installed in products since Spring 2001 is incorporated in the PowerShot A200/A100, providing a photo interval of approx. 1.4 seconds (during OVF:PS A100) to minimize stress on the user. Furthermore, functions that usually require a long processing time such as camera startup, digital zoom, image transfer during playback and display magnification can be performed with minimal stress.

** The shortest interval from one photo to the next (details are shown in Fig. 2-4: Large/Fine mode). However, this value depends on the subject.*

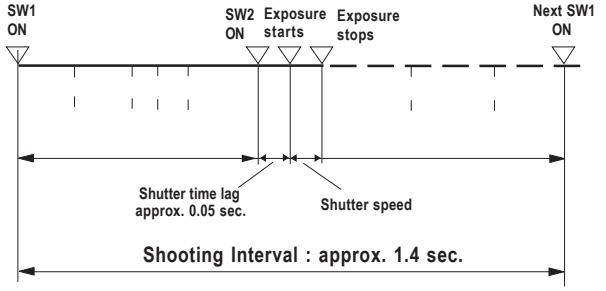


Fig. 2-4 Picture taking sequence

●Built-in flash with four-flashing modes

The built-in flash of the PowerShot A200/A100 can be set to four lighting modes: auto red-eye reduction, auto on (off) and slow synchro, according to the photographic situation.

** When the flash is charging, the LCD moniter turns off owing to power saving function.*

●Low-Temperature Poly-Siillcon TFT LCD Monitor (approx. 120k pixels)

The LCD (1.5-inch) monitor in the PowerShot A200/A100 adopts a power-saving white LED backlight. Also, the low-temperature polycrystalline silicon TFT with about 120,000 pixels, the highest resolution in this class, provides extremely sharp images.

●Total of nine image quality modes (3 recording pixels X 3 compression ratio)

With the PowerShot A200/A100, image quality can be selected from nine combinations of recording pixel resolution (large, medium and small) and compression ratio (super fine, fine and normal), supporting a wide variety of photographic applications for the user.

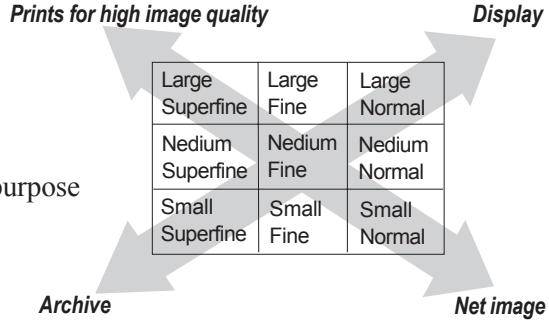


Fig. 2-5 Image quality for each purpose

●Immediate image review (can erase while reviewing)

The PowerShot/IXY series displays an image for two seconds (or ten seconds, depending on setting)* for confirmation immediately after the photo is taken. The PowerShot A200/A100 supplements this feature with the Erase One Image mode, activated by the button with the same name.
This feature allows an undesired image to be erased immediately after the photo is taken, so it does not take up memory space.

* *An image is displayed continuously on the LCD monitor while the shutter button is pressed, and if the SET button is pressed while an image is displayed.*

2-2 High Image Quality

● Primary color filters and signal processing algorithms to get the most of these features

The PowerShot A200/A100 adopts the primary color filters and signal processing algorithms, optimized for them, that we have used in products since Spring 2001.
Although primary color filters are inferior to complementary color filters with regard to brightness resolution and S/N, they are excellent for color reproduction, so their use in digital cameras has recently been growing. However, the important technological considerations of inferior brightness resolution and S/N remain.
Canon has developed signal processing algorithms optimized for primary color filters, and the newly incorporated image engine to handle these algorithms effectively removes false colors and enhances S/N. Also, by redesigning the optics, enhancing sensitivity and maintaining good color reproduction, brightness resolution and S/N performance comparable to complementary color filters is achieved.

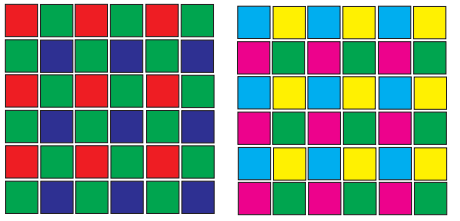


Fig. 2-6 Filter arrangement

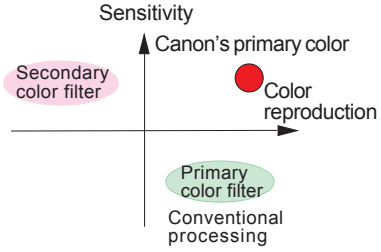


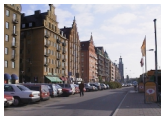
Fig. 2-7 Filter's types and positionings

● High Resolution: 1/3.2-type 1.2 megapixel CCD (in PS A100), 1/3.2-type 2 megapixel CCD (in PS A200)

The PowerShot A200 adopts the newly developed 1/3.2-type 2-megapixel* CCD (1.2-megapixels for the PowerShot A100). These CCDs have almost the same number of pixels as those in the PowerShot A20/A10, but the screen size is reduced from 1/2.7 type to 1/3.2 type, making the smaller optical system possible.
However, when images photographed with the PowerShot A200/A100 are printed on the CP-100, the resolutions are as shown in Table 2-2.

Table 2-2

Print size and image resolution (calculated value) obtainable with PS A200/A100

	Postcard size (148mm x 100mm)	L size (120mm x 82mm)	Card size (86mm x 54mm)
			
PowerShot A200 (1600 x 1200)	4.5 lp/mm	5.4 lp/mm	5.9 lp/mm*
PowerShot A100 (1280 x 960)	3.6 lp/mm	4.3 lp/mm	5.9 lp/mm*

** Although the camera can achieve 7.9lp/mm (PS A200) or 6.3lp/mm (PS A100) of resolution , this resolution is regulated by the printer's lower reso lution.*

● High-resolution single-focus F2.8 lens (35-mm equivalent: 39 mm)

The PowerShot A200/A100 incorporates a newly developed 5-mm F2.8 single-focus lens (35-mm equivalent: 39 mm). The lens configuration consists of five groups of five elements including an aspherical (on one side) lens, and focusing is achieved by moving all five lens elements of the system as a unit.
The optical capability is sufficient to support a CCD with resolution of 2-megapixels at 1/3.2 element pitch, and each aberraction is minimized by the aspherical lens.

●AF maintains image focus at any distance

Although most cameras in this class typically use fixed-focal-length (pan) focus, the PowerShot A200/A100 is equipped with high-precision AF. This allows sharp images to be obtained regardless of distance to photographic subject. Also, the normally unusable focal range for most such cameras between the macro focal plane and the minimum normal focal plane from 5 cm to infinity, becomes possible.

●Intelligent AE determines optimum exposure in all photographic situations

To achieve precise exposure control with the PowerShot A200/A100, the intelligent AE system that has been used since Spring 2001 is adopted. The major features are (1) 3-point AF-linked AE, (2) low brightness/background lighting correction, and (3) close-up flash correction. Therefore, under conditions usually prone to exposure errors, and when the flash is used in low brightness, with background lighting or close up, more precise exposure can be obtained than was previously possible.

●High-precision white balance (auto, plus five preset positions)

With the PowerShot A200/A100, the whole screen is divided into many blocks from which calculation data for white balance is collected, allowing precise control.
Also, as with the PowerShot G2/S40/S30, the Fluorescent Lamp preset white balance position is subdivided into two settings, called Fluorescent Lamp and Fluorescent Lamp H, for a total of five setting positions. Recently, color rendering of fluorescent lamps has varied, covering a wide range of high and low color temperature objects. Therefore, the Fluorescent Lamp position supports relatively lower color temperatures such as "white" and "daylight white", and the Fluorescent Lamp H position supports relatively higher color temperatures such as "daylight color". The regular light bulb position is also used for incandescent-colored fluorescent bulbs.

Types of Fluorescent Light	White Balance Preset Position
Three-wavelength type fluorescent light designed to mimic incandescent light	Incandescent
Daylight white fluorescent light, white fluorescent light, daylight white three-wavelength type fluorescent light	Fluorescent
Daylight fluorescent light, daylight three-wavelength type fluorescent light	Fluorescent H

Table 2-3 Types of fluorescent light and white balance preset position

●Wide range of ISO-equivalent speed settings (Auto, ISO 50(A200)-64(A100)/100/200/400 equivalent)

The PowerShot A200/A100 user can select ISO speed equivalent to film ratings of ISO 50(64), 100, 200 and 400. For example, in a bright environment where there is no need to worry about camera shake, the ISO 50(64) setting can be selected to provide low noise conditions for highest image quality, and in a dark environment, the ISO 400 setting can be selected to minimize the effects of camera shake. During auto operation, the camera selects the optimum value from 50(64) to 140 (50(64) to 150 with the flash, or for movies 50(64) to 280 for QVGA, and 50(64) to 560 for Q^2VGA.)

● **Noise reduction feature for high S/N**

Generally, longer exposure times generate more noise in the CCD, which can be readily visible. To reduce such noise, the PowerShot A200/A100 incorporates automatic internal noise reduction processing.
The specific process is as follows: after exposure when the iris is closed, image capture is repeated for the same shutter period as just used. This allows only noise to be captured as data, and this data can then be subtracted from the image just obtained, resulting in noise reduction in the image.
However, this process applies only for shutter speeds between 1/8 and 1 second.

● **SuperFine mode image quality comparable to that of RAW mode**

Although the PowerShot A200/A100 is a low-priced model, it includes a "Super Fine" mode that uses a lower compression ratio than the Fine mode. The Super Fine mode produces an image quality equivalent to uncompressed TIFF file format, but the image storage capacity is much less than that of the JPEG baseline recording format.
The Super Fine mode compression is not lossless, so the original data cannot be completely restored, but because the compression ratio is extremely low, the block distortion peculiar to JPEG is practically eliminated. Also, this mode is good for general use because of the short processing time and ability to be played back even without the TWAIN driver, because of the ordinal JPEG baseline format.

2-3 High Grade Design

● **2 : 1 Sideways Layout**

As a "New Generation Camera", the PowerShot A200/A100 has the 2:1 aspect ratio "wide & low" proportions like the PowerShot S40/S30. This design is easy to slip into a pocket or bag, and easy to carry.

● **Graphical symbols on the top of the camera show main functions at a glance**

Graphical symbols representing the basic camera functions are printed on the top of the screen of the PowerShot A200/A100 cameras. The basic functions are this easy to see at a glance on the store shelf, and serve to accent the design.

Photo 2-5 PowerShot A100

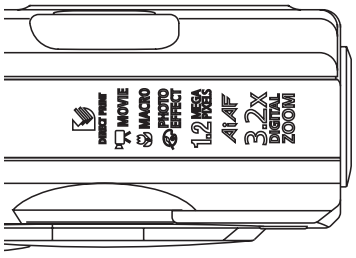


Fig. 2-9 Graphical symbols at the top

2-4 System Accessories and Software

● Waterproof case submersible to 30 m

The PowerShot A200/A100 fits into the WP-DC500 Waterproof Case, submersible to 30 meters for diving and snorkeling.

** We intend to publish information later about the special technologies used in the waterproof case.*

● Special-purpose compact power adapter

The PowerShot A200/A100 can be powered from household power source using the CA-PS800 Compact Power Adapter.

● Full featured application software

○Usage of Canon Image Gateway

When an PowerShot A100/A200 purchaser registers as a member, they can receive the following on-line photo services at Canon Image Gateway:

-Image upload service
-On-line photo album service
-Stored image printing service

-Photo collection creating service (My Book)
-Cellular telephone support (name undetermined)
-DP Service: prints up to L size, double-sided

Plan

** for Japanese market only*

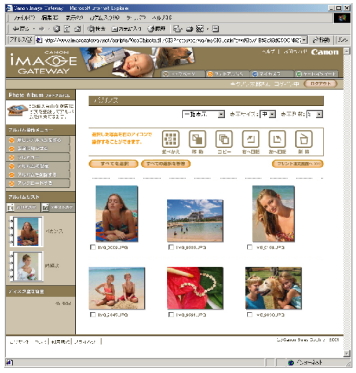


Fig.2-10 CIG Top scren

○ZoomBrowser EX 3.3(A100)/3.4(A200) (Win)/ImageBrowser 2.3(A100/A200) (Mac) featuring improved ease of operation

ImageBrowser 2.3 (Mac) is supported by Mac OS 10.1 (though not by Mac OS 10). In the previous version, rotating a JPEG image required the image to be decompressed, then rotated as RGB data, and then recompressed as the JPEG image. In this version, JPEG images are rotated as is, so image data loss is eliminated.

○Photorecord 1.4 (Win) for easy layout and printing for many pictures

Unchanged from previous version, for convenience.

○PhotoStitch 3.1 for creating precise panoramic pictures

Unchanged from previous version, for convenience.

○RemoteCapture 2.4(A100)/2.5(A200) for transfering images to the PC and capture control from the PC

Unchanged from previous version, for convenience.

○Twain Driver 4.3(A100)/4.5(A200) / WIA Driver 4.3(A100)/4.5(A200) (Win)
Unchanged from previous version, for convenience.

○Plug-in module 4.3(A100)/4.5(A200) / USB mounter 1.4(A100)/1.6(A200) (Mac)
Unchanged from previous version, for convenience.

○RAW Image Converter 2.0(A100) for processing RAW images
From this version, the TWAIN driver and UI share the same development prosess.
Also, loading RAW data into ZoomBrowser EX 3.3/3.4 (Win) and ImageBrowser 2.3 (Mac) causes RAW Image Converter 2.0 to load automatically for developing and saving the data.

** This application is not available for the PowerShot A200 and A100 because they cannot record RAW data.*

○Apple QuickTime 5.0
Unchanged from previous version, for convenience.

○CP-10 PrinterDriver.
Unchanged from previous version, for convenience.

3 Exterior

3-1 Camera

Photo 3-1 PowerShot A200 front

Photo 3-2 PowerShot A200 rear

Photo 3-3 PowerShot A200 top

** These photos have slightly different exterior from mass-production model because of prototype.*

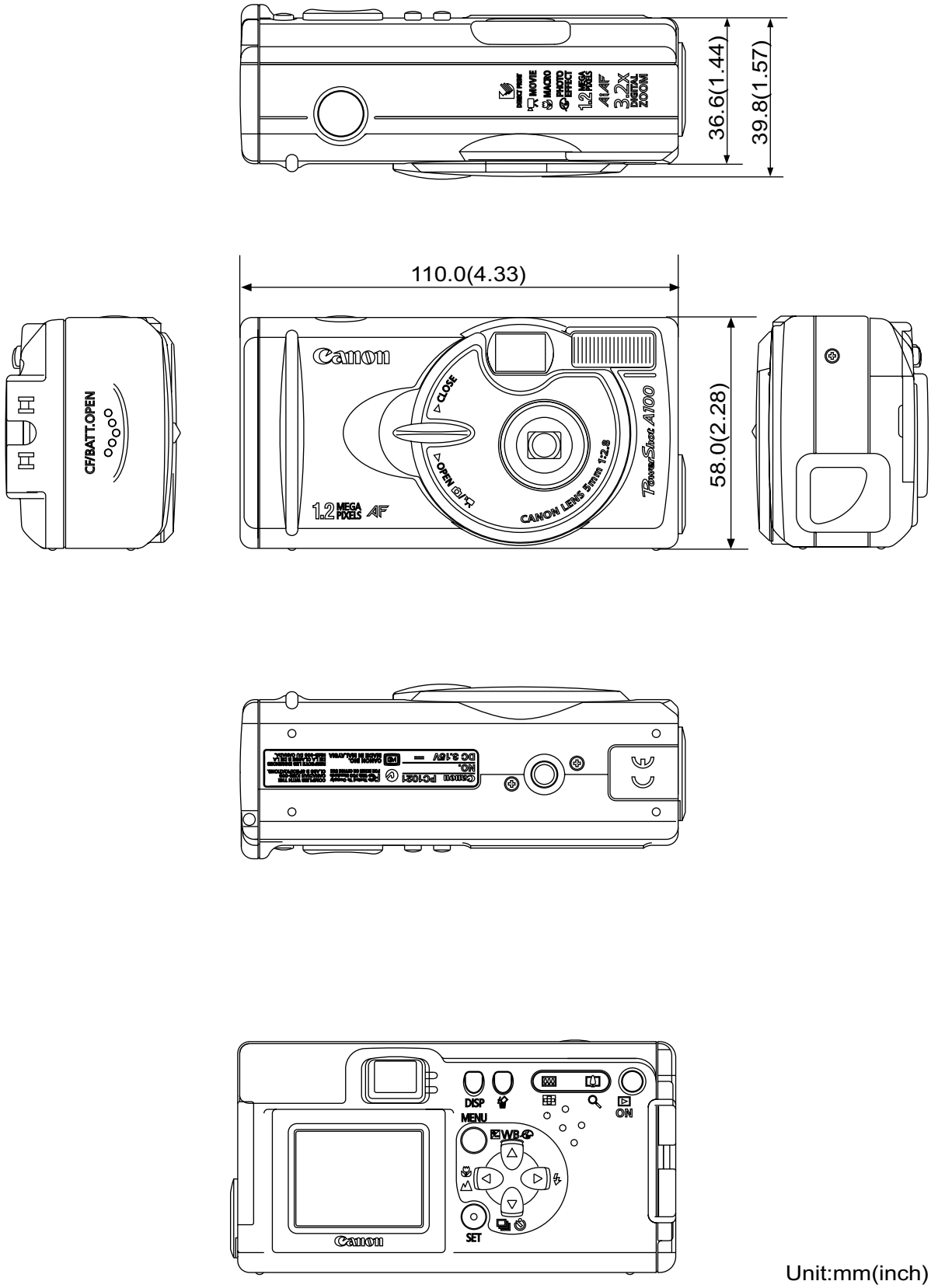
Photo 3-4 PowerShot A100 front

Photo 3-5 PowerShot A100 rear

Photo 3-6 PowerShot A200/A100 operation part

** These photos have slightly different exterior from mass-production model because of prototype.*

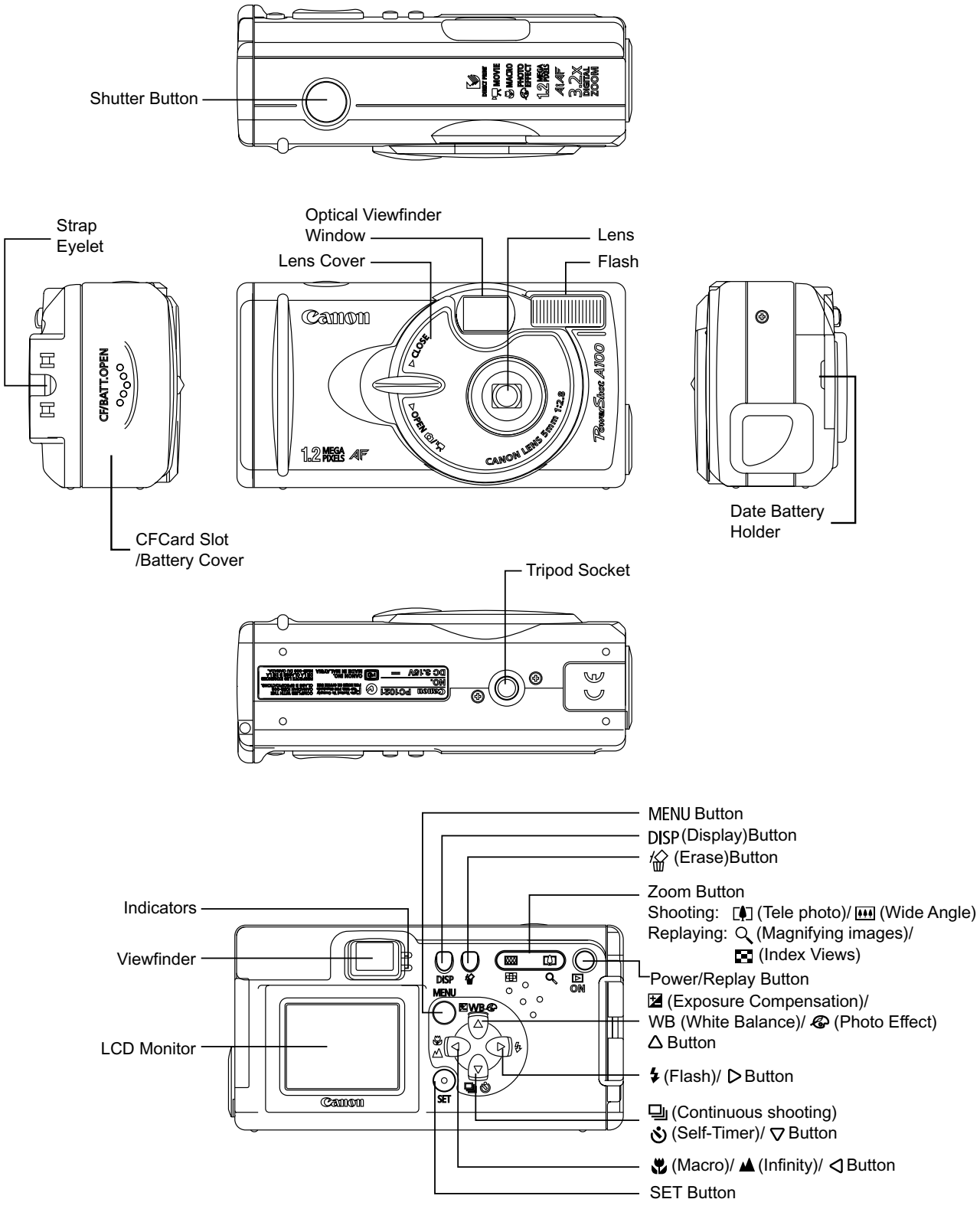
3-2 6-dimensional views



Unit:mm(inch)

** The size of PowerShot A200 is the same as PowerShot A100.*

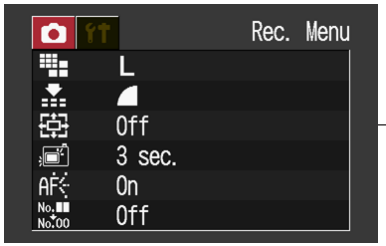
3-3 Nomenclature



** In PowerShot A200,the model name display on the front changes into A200 from A100, and picture display changes into 2.0 from 1.2.*

3-4 User Interface display

■ Rec.Menu



(A100 Rec.mode: Auto)

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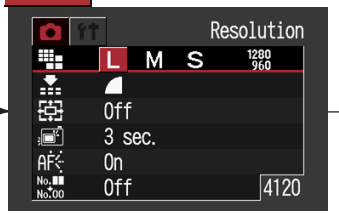

- L : 1280X960
- M : 1024X768
- S : 640X480

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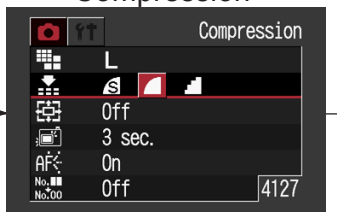

- Super Fine
- Fine
- Normal

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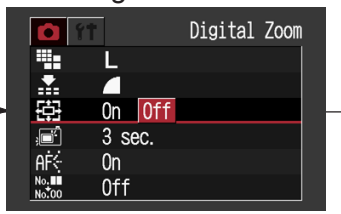

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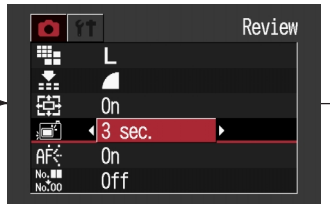

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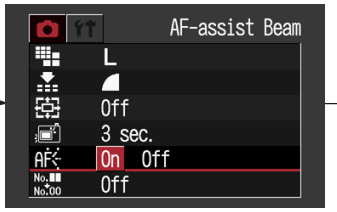

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- On/ • Off

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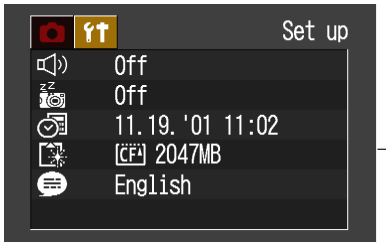

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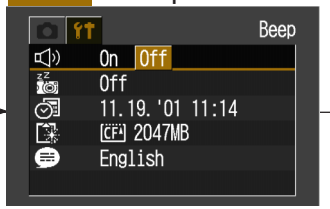

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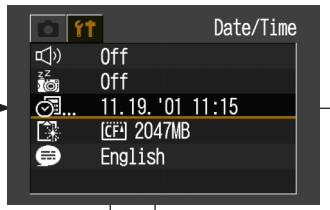

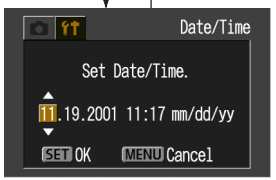

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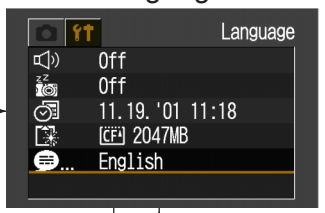
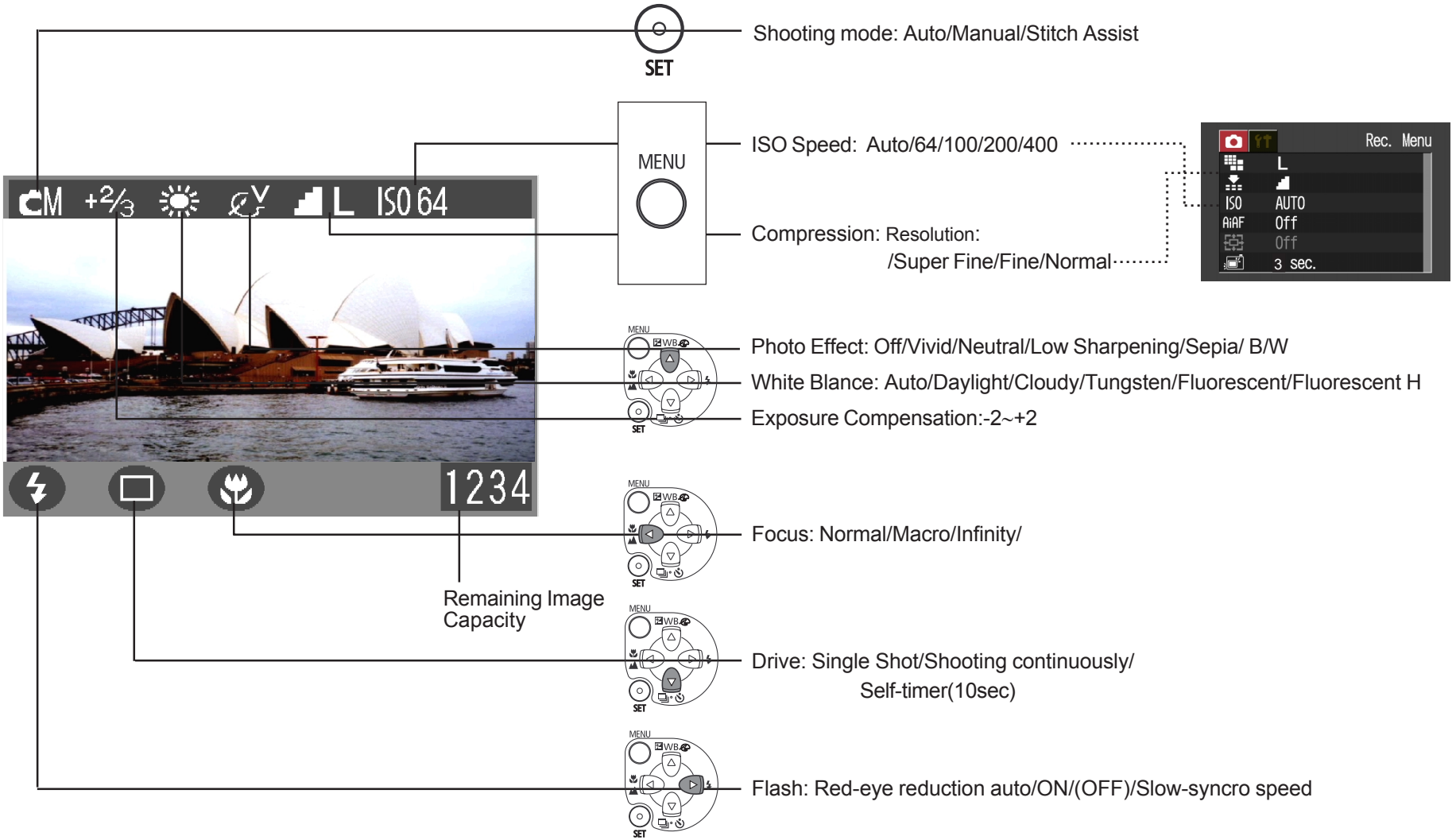


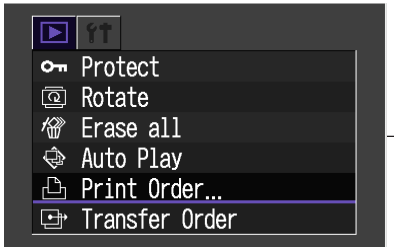
- English
- Deutsch
- Francais
- NederLands
- Dansk
- Suomi
- Italiano
- Norsk
- Svenska
- Espanol
- 日本語

** Although the layout of these screens may differ slightly from that of the final product, there is no change operationally.*

<Information during shooting>



■ DPOF



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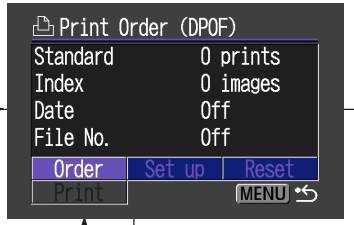

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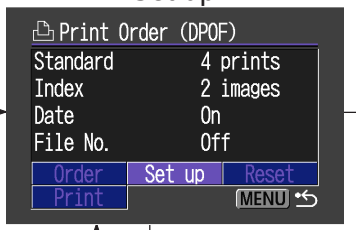
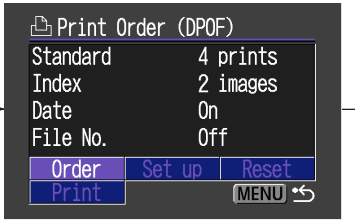
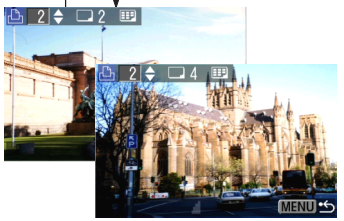
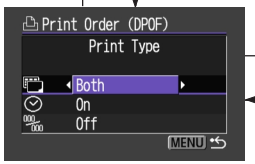




Print

(order)





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- Index
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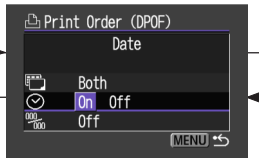

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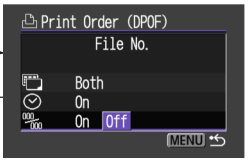

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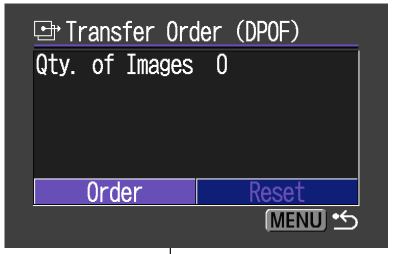

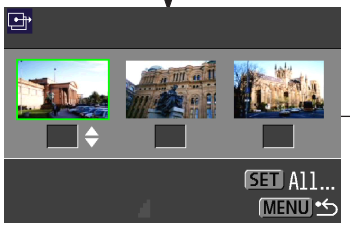

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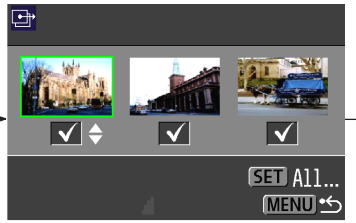
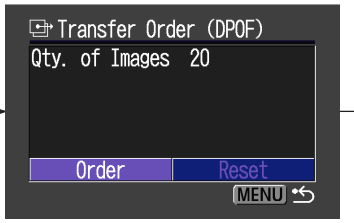




Transfer

4 Specifications

4-1 Camera Specifications

	(PowerShot A200)	(PowerShot A100)
<Camera effective pixels>	Approx. 2 million	Approx. 1.2 million
<CCD>		
-Reading format	Interline	<<
-Image size	4.48 (H) X 3.38 (V) mm (0.18 X 0.13 in. equivalent to 1/3.2-inch size	4.48 (H) X 3.36 (V) mm (0.18 X 0.13 in.) equivalent to 1/3.2-inch size
-Unit cell size	2.75 (H) X 2.75 (V) micron (0.108 X 0.108 m-in.)	3.5 (H) X 3.5 (V) micron (0.14 X 0.14 m-in.)
-Total pixels	Approx. 2.1 million (1,704 X 1,257)	Approx. 1.3 million (1,344 X 971)
-Filter array	Primary color filter (Beyer)	<<

<Lens>

-Focal length	5 mm (39 mm : 35mm film equivalent)
-f/number	2.8
-Lens construction	5 pieces in 5 groups (include 1 aspherical lens)

<Focusing range> (Measured from tip of lens)

-Normal	20 cm (0.67 ft.) -infinity
-Macro	5 cm (0.17 ft.) - 20 cm (0.67 ft.) *Max.shooting area PS A200 : 46 X 34 mm (1.8 X 1.3 in.) PS A100 : 47 X 35 mm (1.9 X 1.4 in.)
-Landscape	5 m (17 ft.) - infinity

<Optical viewfinder>

-Type	Inverted Galilean finder
-Magnification	0.45
-Coverage	Vertical : 80% Horizontal : 80%

<LCD monitor>

-Type	Low-temperature polycrystalline silicon TFT color LCD
-Effective pixels	117,600 (490 (H) X 240 (V))
-Display size	38 mm diagonal (1.5 inch)
-Coverage	100%

<Focusing>

-Control system	TTL AiAF (3 focusing points) / TTL AF (Selectable)(1 focusing point) (Focus lock is available.)
-Focusing points	3 focusing points or 1 focusing point (center)

<Exposure control>

-Light Metering method	Evaluation (Linked with focusing point)
-Exposure method	Program AE
-Exposure compensation	+/-2.0EV (at every 1/3-stop)

<Aperture and shutter>

-Shutter type — Mechanical shutter and electronic shutter

-Shutter speed — 1 - 1/2,000 sec.
(1 - 1/6 sec. shutter is available at flash-off or slow-syncro. in Manual mode.)
(Slow shutter of 1/6 sec. and more operates with noise reduction.)

-Aperture range — f/2.8 / f/5.6

<White balance>

-Mode — TTL auto white balance, pre-set white balance
(Available settings : Daylight, Cloudy, Tungsten, Fluorescent or Fluorescent H)

<Flash (Built-in)>

-Operation modes — Red-eye reduction auto, Auto, On, (Off), Slow-syncro.

-Flash range — 20 cm - 2 m (0.67 - 6.7 ft)
** The flash photograpy are not allowed in macro mode due to inaccurate exposure control.*

-Flash syncro. speed — (When sensitivity is set to ISO100 equivalent.)

-Recycling time — 1/30 sec. or faster (Normal) / 1 sec. or faster (Slow-syncro.)
10 sec. or shorter (full flash, battery voltage = 3 V)
** When the flash is charging, the LCD monitor turns off owing to power saving function.*

<Shooting specifications>

-Shooting modes — Auto / Manual / Stitch assist / Movie

-Color effects — Vivid color / Neutral color / Low sharpening/ Sepia / Black & White

-Continuous shooting modes — Approx. 2 images/sec.(PS A200) (Large/Fine, LCD monitor OFF)
Approx. 3 images/sec.(PS A100) (Large/Fine, LCD monitor OFF)

Number of shooting pictures

	L/SF	L/F	L/N	M/SF	M/F	M/N	S/SF	S/F	S/N
PS A100	7	10	20	10	15	29	22	32	56
PS A200	5	7	14	9	14	26	19	28	50

-Self timer — Operates with 10 seconds countdown.

-ISO equivalent speed — Auto, ISO50(PS A200 only), 64(PS A100 only), 100, 200 and 400
(At Auto setting, camera automatically adjusts speed according to ambient light, from ISO50 (PS A200) / 64 (PS A100) to ISO150 equivalent.)

-Digital zoom — PS A200 : 4x
PS A100 : 3.2x

-Shutter release from PC — Use of "Remote Capture" software (include) when USB connection

-Camera wake-up time/ Release time lag (sec.)

Mode	Finder	Wake-up time PS A100	Wake-up time PS A200	Release time lag PS A100	Release time lag PS A200
Shooting	EVF	2.4	2.5	0.07	0.08
	OVF	1.7	1.7	0.05	0.08
Playback	-	3.7	2.8	-	-

**Varies with shooting modes*

-Shooting interval (*right table)

Shooting Mode	Finder	N/M	Shooting Interval (sec.) PS A100	Shooting Interval (sec.) PS A200
Auto	EVF	Normal	1.6	1.8
		Macro	2	2.4
	OVF	Normal	1.4	1.6
		Macro	1.6	1.8

**The actual shooting interval is that of shutter time (sec.) added to the above data.*

<Recording specifications>

-Compression mode — Super Fine, Fine or Normal

-Number of recording pixels
Large : 1,600 X 1,200 (PS A200) / 1,280 X 960 (PS A100)
Medium : 1,024 X 768
Small : 640 X 480
Movie : 320 X 240 (20fps,Approx.9sec.:A200), (15fps,Approx.14sec.:A100)
160 X 120 (20fps,Approx.26sec.:A200), (15fps,Approx.30sec.:A100)

-File format

Design rule for Camera File system (DCF*)(Exif 2.2)

** "DCF" is an abbreviation of "Design rule for Camera File system" standardized by Japan Electronic and Information Technology Industries Association (JEITA), however a use of this abbreviation is allowed in Japan only due to trademark rights. Exif 2.2 records shooting parameters useful for the image correction processing performed at the time of printing.*

-Recording format

Digital Print Order Format (DPOF) Version 1.1

-Storage media

Still image : JPEG

-Storage capacity

Movie : Motion JPEG

CompactFlash™ (CF) card (Type I)

PS A200

	L / SF	L / F	L / N	M / SF	M / F	M / N	S / SF	S / F	S / N
File Size	957KB	611KB	302KB	450KB	294KB	155KB	208KB	141KB	79KB
FC-8M	7	11	24	16	24	46	35	50	87
FC-16M	15	24	48	32	49	92	70	99	172
FC-32M	31	49	99	67	102	189	143	206	353
FC-64M	64	100	200	135	205	379	288	415	707
FC-128M	128	200	401	271	412	760	577	831	1417

PS A100

	L / SF	L / F	L / N	M / SF	M / F	M / N	S / SF	S / F	S / N
File Size	693KB	450KB	228KB	450KB	294KB	155KB	208KB	141KB	79KB
FC-8M	10	16	32	16	24	46	35	50	87
FC-16M	21	32	64	32	49	92	70	99	172
FC-32M	43	67	131	67	102	189	143	206	353
FC-64M	88	135	263	135	205	379	288	415	707
FC-128M	177	271	528	271	412	760	577	831	1417

PS A200 (Movie)

	320×240	160×120
File Size	380KB/sec.	130KB/sec.
FC-8M	18 sec.	48 sec.
FC-16M	36 sec.	97 sec.
FC-32M	76 sec.	198 sec.
FC-64M	152 sec.	399 sec.
FC-128M	305 sec.	799 sec.

PS A100 (Movie)

	320×240	160×120
File Size	285KB/sec.	98KB/sec.
FC-8M	24 sec.	63 sec.
FC-16M	49 sec.	126 sec.
FC-32M	100 sec.	263 sec.
FC-64M	201 sec.	527 sec.
FC-128M	404 sec.	1056 sec.

***Any documents to be distributed outside the company should state that Above-written figures are measured under Canon's standard shooting conditions and may vary depending on the scene, subjects or camera settings.**

-Tone reproduction

Luminance signal : 8 bits

Color signal : 8 bits (Cr / Cb)

<Playback specifications>

-Playback modes

Single, Index (9 thumbnail images), Magnification or Slide show

-Direct print

Image output to dedicated printer (CP-10, CP-100)

-Magnify

Approx. 2X to 10X on built-in LCD monitor (Zoom)

-Vertical and horizontal conversion

Vertical and horizontal conversion can be set on each image.
(Both LCD and Video Out play an image according to setting.)

<Erasing specifications>

-Erasing modes

Single image

All images

(When "All images" is set, any images in the CF card captured with another digital camera or peripheral device (DCF format) are erased. Regarding Canon digital cameras, images taken by PowerShot Pro70 or prior models are not erased. Images taken by PowerShot A50 (DCF format) or latest models are erased (except EOS D2000/D6000).
However images which are protected are not erased.

<Interface>

-Computer I/F — Universal Serial Bus (USB)

<Display specifications>

-LED (Upper LED)
- Lights in green : Indicates that the camera is ready with flash off.
- Blinks in green : During start/Recording to CF card/Reading CF card/ Erasing data on CF card/Data transfer to PC
- Lights in orange : Indicates that the camera and flash are ready.
- Blinks in orange : Indicates that the camera is ready (camera shake warning)

-LED (Lower LED) — Lights in yellow : SW1 ON in macro shooting / manual focus

<Power Supply>

-Power sources
- Primary battery : LR 6 / Size AA battery (2 cells)
- Secondary battery : (Size AA / NiCd battery), Size AA / NiMH battery
- Compact power adapter : CA-PS800

-Shooting capacity

LR 6 / Size AA battery (Panasonic)
- LCD ON : Approx. 90 (A200) / 100 (A100) images
- LCD OFF : Approx. 300 (A200) / 380 (A100) images

Size AA / NiMH battery (NB-1AH)
- LCD ON : Approx. 200 (A200) / 210 (A100) images
- LCD OFF : Approx. 550 (A200) / 630 (A100) images

** Canon's standard conditions of measuring shooting capacity are as follows: Normal temperature (23 Celsius degrees). LCD viewfinder is ON. Shoot images with 20 seconds intervals. Use flash at every 4-time shootings. Turn camera off and on at every 8-time shootings.*

*** Whth alkaline batteries the shooting capacity is extremely reduced in low-temperature environments.**

-Playback time

LR 6 / Size AA battery (Panasonic) : Approx. 90 min.

Size AA / NiMH battery (NB-1AH) : Approx. 120 min.

** Canon's standard conditions of measuring playback time are as follows: Normal temperature (23 Celsius degrees). Repeat playback automatically at a speed of 1 image per 3 seconds.*

<Camera specifications>

-Operating temperature — 0 - 40 C (32 - 104 F)

-Operating humidity — 10 - 90%

-Dimensions (WxHxD) — 110 X 58 X 36.6 mm (4.33 X 2.28 X 1.44 in.) (excluding protrusion)

-Weight — Approx. 175 g (6.17 oz) (excluding batteries and CF card)

●Parameter availability by modes

		Auto	Manual	Stitch	Movie
Flash	Auto	○	○	—	—
	Red-eye reduction auto	○*	○*	—	—
	ON	—	○	△	—
	OFF	○	○	△*	—
	Slow-syncro.	—	○	△	—
Macro		○	○	△	○
Shooting	Single	○*	○*	△*	○*
	Continuous	—	○	—	—
	Self-timer	○	○	△	○
Photo effect		—	○	△	○
AF frame selection	3 points(AiAF)	○(1)	○(1)	○(1)	○(1)
	1 point	—	○	—	—
Exposure compensation		—	○	△	○
White balance		Auto only	○	△	○
Recording pixels	L	○*	○*	△*	—
	M	○	○	△	—
	S	○	○	△	—
	Movie(320×240)	—	—	—	○
	Movie(160×120)	—	—	—	○
Compression level	Superfine	○	○	△	—
	Fine	○*	○*	△*	—
	Normal	○	○	△	—
Recording format	JPEG	○	○	○	—
	M-JPEG	—	—	—	○
ISOequivalent speed		Auto only	○	Auto only	Auto only
Digital zoom		○	○	—	—
AF-assist beam off		○	○	△	○

* : Default

○ : Selectable

△ : Selectable for the first picture only.

— : Not selectable

▒ : Settings are memorized after switch turns off.

(1) : Not selectable for ”Macro”

●Playback compatibility

Playback compatibility of PowerShot/IXY DIGITAL series is as follows. PowerShot A200/A100 can accept 3200(H) X 2400(V) pixels.

			Playback Cameras													
			PS 350	PS A5/A5 Z	PS Pro70	PS A50	PS S10/S20	IXY DIGITAL	PS G1 Pro90 IS	EOS D30	IXY D 200/300	PS A10/A20	PS G2	PS S30/S40	PS A40/A30	PS A200 /A100
Image taking Cameras	PS 350	CIFF	○	○	○	○	○	×	×	×	×	×	×	×	×	×
	PS A5/A5 Z	CIFF	△	○ *1	○ *1	○ *1	○ *1	×	×	×	×	×	×	×	×	×
	PS Pro70	CIFF	△	○ *2	○ *1	○ *1	○ *1	×	×	×	×	×	×	×	×	×
	PS A50	CIFF	△	○ *2	○ *1	○ *1	○ *1	×	×	×	×	×	×	×	×	×
		DCF	×	×	×	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
	PS S10/S20	DCF	×	×	×	○ *3	○	○	○	○	○	○	○	○	○	○
	IXY DIGITAL	DCF	×	×	×	○	○	○	○	○	○	○	○	○	○	○
	PS G1	DCF (Still)	×	×	×	○ *1*3	○ *1	○ *1	○	○	○ *1	○ *1	○	○	○	○
	PS Pro90 IS	(Movie)	×	×	×	▲	▲	▲	○	▲	○ *5	▲	○	○	○ *5	○ *5
	EOS D30	DCF	×	×	×	○ *1*3	○ *1	○ *1	○	○	○ *1	○ *1	○	○	○	○
	IXY DIGITAL	DCF (Still)	×	×	×	○	○	○	○	○	○	○	○	○	○	○
	200/300	(Movie)	×	×	×	▲	▲	▲	○ *6	▲	○	▲	○	○	○	○
	PS A10/A20	DCF	×	×	×	○	○	○	○	○	○	○	○	○	○	○
	PS G2	DCF (Still)	×	×	×	○ *1*3	○ *1	○ *1	○	○	○ *1	○ *1	○	○	○	○
		(Movie)	×	×	×	▲	▲	▲	○ *5*6	▲	○ *5*6	▲	○	○	○ *5*6	○ *5*6
	PS S30/S40	DCF (Still)	×	×	×	○ *1*3	○ *1	○ *1	○	○	○ *1	○ *1	○	○	○	○
		(Movie)	×	×	×	▲	▲	▲	○ *5*6	▲	○ *5*6	▲	○	○	○ *5*6	○ *5*6
	PS A40/A30	DCF (Still)	×	×	×	○	○	○	○	○	○	○	○	○	○	○
		(Movie)	×	×	×	▲	▲	▲	○ *6	▲	○ *5	▲	○	○	○	○ *5*6
	PS A200/A100	DCF (Still)	×	×	×	○	○	○	○	○	○	○	○	○	○	○
		(Movie)	×	×	×	▲	▲	▲	○ *6	▲	○ *5	▲	○	○	○	○
	Other DCF	DCF (Still)	×	×	×	○ *3	○ *4	○ *4	○ *4	○ *4	○ *4	○ *4	○ *4	○ *4	○ *4	○ *4
	Cameras	(Movie)	×	×	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

○ : Replayable
△ : Impossible to replay in RAW images
▲ : Thumbnail display of AVI (imain image with thumbnail (.thm) only)
× : Not replayable
*1 : • Thumbnail display of RAW mode images
*2 : • Thumbnail display of RAW mode images. JPEG file replay up to 1,024 X 768 pixels
*3 : • Only JPEGfile replay
: • Replayable up to 1,632 X 1,232 pixels. Thumbnail display (160 X 120) of images exceeding that size and ”Image too large” message displayed.
*4 : • Only JPEGfile replay
: • Replayable up to 3,2002 X 2,400 pixels. Thumbnail display (160 X 120) of images exceeding that size and “Image too large” message displayed.
*5 : • Not replayable up to definite size. “Image too large” message displayed.
*6 : • Not replayable up to definite movie shooting timesize. “Corrupted data” message displayed.

* Since the PS G2/PS G1/Pro90 IS/EOS D30’s RAW has an internal JPEG file for playback, a full screen image is displayed.
However, if the RAW from the PS A50 and previous models is played back with the PS G2/PS G1/Pro90 IS/EOS D30, thumbnails will be displayed.

4-2 System Requirements

		Windows	Macintosh
OS		-Windows 98 (including SE) -Windows 2000 -Windows Me *Windows XP	-Mac OS from 8.6 to 9.2 (PS A100) -Mac OS from 8.6 to 10.1 (PS A200) * ** unavailable of Mac OS 10.0* ** unavailable with Mac OS 10.1 at UFS (Unix File System)* -USB Mounter is available with Mac OS 9.0 to 9.2
CPU		Pentium 150MHz and over (XP requires 233MHz and over)	Power PC
Memory (RAM)		-32MB or more (Win98) -64MB or more (Win Me/2000) -128MB or more (Win XP)	20MB or more for application
Space capacity of hard disk *1: Capacity for installation	PSA100	-ZoomBrowser EX 3.3 (PhotoRecord 1.4) : 120MB or more -PhotoStitch 3.1 : 40MB or more -Remotecapture 2.4 : 20MB or more -Raw Image Converter 2.0 : 10MB or more -USB TWAIN Driver 4.3 : 25MB or more -USB WIA Driver 4.3 : 25MB or more -CP-10 PrinterDriver : 1MB or more *1	-ImageBrowser 2.3 : 20MB or more -PhotoStitch 3.1 : 30MB or more -Remotecapture 2.4 : 15MB or more -Raw Image Converter 2.0 : 10MB or more -USB Mounter 1.4 : 5MB or more -USB Plug-In Module 4.3 : 15MB or more -CP-10 PrinterDriver : 3.8MB or more *1
	PSA200	-ZoomBrowser EX 3.4 (PhotoRecord 1.4) : 120MB or more -PhotoStitch 3.1 : 40MB or more -RemoteCapture 2.5 : 20MB or more -USB TWAIN Driver 4.5 : 25MB or more -USB WIA Driver 4.5 : 25MB or more -CP-10 PrinterDriver : 1MB or more *1	-ImageBrowser 2.3 : 20MB or more -PhotoStitch 3.1 : 30MB or more -Remotecapture 2.5 : 15MB or more -USB Mounter 1.6 : 5MB or more -USB Plug-In Module 4.5 : 15MB or more -CP-10 PrinterDriver : 3.8MB or more *1
Display		800 x 600 dots (8 bits) and over 1,024 x 768 dots (16 bits) and over (recommended)	800 x 600 dots (256 color) or more 1,024 x 768 dots (32000 color) or more (recommended)

** Solution Disk Ver. 9.0 is bundled with the PS A100*

Solution Disk Ver. 10.0 is bundled with the PS A200

4-3 Specifications of Major Accessories

●Compact Power Adapter CA-PS800

- Rated input : 100 - 240 V AC (50/60 Hz)
  16 VA (100 V) - 26 VA (240 V)
- Rated output: 3.15 V DC, 2 A
- Ambient temperature : 0 - 40 ºC
- Dimensions : 42.5 (1.67) X 104 (4.11) X 31.4 (1.27) mm (inch)
- Weight : Approx. 180 g (Excluding cable)

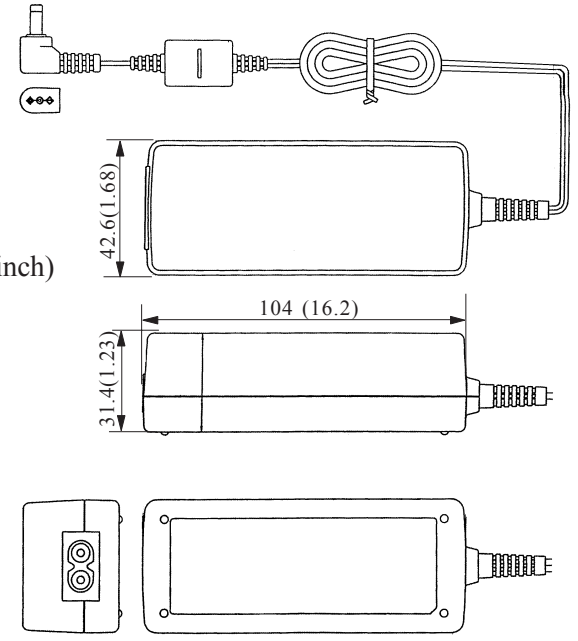


Fig.4-1 Compact Power Adapter CA-PS800

●Ni-MH Battery NB-1AH

- Type : Size-AA Ni-MH battery (rechargeable)
- Voltage : 1.2 V DC
- Capacity : 1600 mAH (1550 mAH : min.)
- Ambient temperature : 0 - 40 ºC
- Dimensions : Approx. 14.5 (0.57) dia. x 50 (1.97) mm (inch)
- Weight : Approx. 27 (0.95 oz) g

●Battery Charger CB-3AH

- Rated input : 100 - 240 V AC (50/60 Hz)*, 8 W
- Rated output : Charging current 0.92 A (average for 1 or 2 batteries), 0.46 A (average for 3 or 4 batteries)
- Charging time : Approx. 110 min. for 1 or 2 batteries, approx. 220 min. for 3 or 4 batteries
- Charging indicator : During charging : Orange lamp blinks
  Charging completed : Orange lamp lights
- Ambient temperature : 0 - 40 ºC (0 - 35 ºC recommended)
- Dimensions : Approx. 113 (4.45) x 74 (2.91) x 27.4 (1.08) mm (inch)
- Weight : Approx. 100 (3.53) g (oz)

**In the US, it will be 120 VAC (60 Hz).*

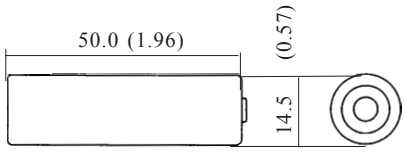


Fig.4-2 NiMH Battery NB-1AH

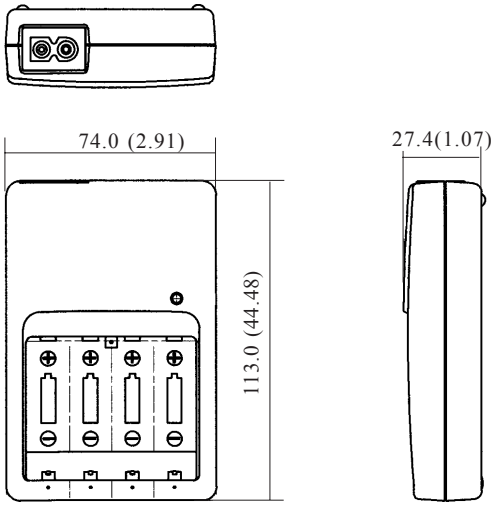


Fig.4-3 Battery Charger CB-3AH

●Interface Cable IFC-300PCU

• USB Series A 4-pin connector - Series mini - B 5-pin connector

• The dimensions are shown in Fig. 4-4.

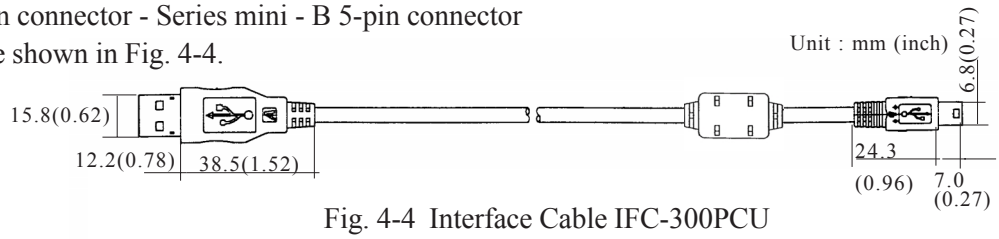


Fig. 4-4 Interface Cable IFC-300PCU

●Direct Interface Cable DIF-100

• Square type 10-pin connector - Round type 5-pin USB connector

• The dimensions are shown in Fig. 4-5.

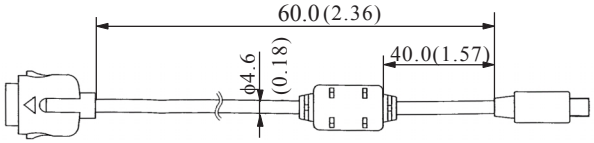


Fig. 4-5 Direct Interface Cable DIF-100

5 System

5-1 Accessory compatibility

●PowerShot / IXY series accessory compatibility

	PS A200 PS A100	PS A40 PS A30	PS S30 PS S40	PS G2	IXY D 200	IXY D 300	PS A20 PS A10	IXY DIGITAL	PS Pro 90 IS	PS G1	PS S10 PS S20	PS Pro70	PS A5 Z PS A50	PS A5
<Battery>														
NB-5H	-	-	-	-	-	-	-	-	-	-	O	-	O	O
NB-4H	-	-	-	-	-	-	-	-	-	-	-	O	-	-
NB-1L	-	-	-	-	O	O	-	O	-	-	-	-	-	-
BP-511	-	-	-	O	-	-	-	-	O	O	-	-	-	-
BP-512	-	-	-	O	-	-	-	-	-	-	-	-	-	-
NB4-100	O*1	O	-	-	-	-	O	-	-	-	-	-	-	-
NB-2L	-	-	O	-	-	-	-	-	-	-	-	-	-	-
*1 2 sets of 2 batteries (4 battery package).														
<Adapter/Charger>														
CA-PS100/100E	-	-	-	-	-	-	-	-	-	-	O	-	O	O
CA-PS200	-	-	-	-	-	-	-	-	-	-	-	O	-	-
CA-PS300	-	-	-	-	-	-	-	O	-	-	-	-	-	-
CA-PS500	-	-(O)*2	-	-	O	O	-(O)*2	O	-	-	-	-	-	-
CA-560	-	-	-	O	-	-	-	-	O	O	-	-	-	-
CR-560	-	-	-	O	-	-	-	-	O	O	-	-	-	-
CA-PS800	O	-	-	-	-	-	-	-	-	-	-	-	-	-
CB-2L/2LE	-	-	-	-	-	-	-	O	-	-	-	-	-	-
CB-2LS/2LSE	-	-	-	-	O	O	-	-	-	-	-	-	-	-
CB-3AH	O*3	O	-	-	-	-	O	-	-	-	-	-	-	-
CBK100	O*3	O	-	-	-	-	O	-	-	-	-	-	-	-
CB-2LT/CB-2LTE	-	-	O	-	-	-	-	-	-	-	-	-	-	-
*2 It is possible to use by inserting the adapter's DC plug in the jack of PS A40/A30/A20/A10 cameras directly without using DC coupler.														
*3 4 batteries (2 set of 2) can be recharged.														
<DC Coupler>														
DR-100/100A	-	-	-	-	-	-	-	-	-	-	O	-	O	O
DR-200	-	-	-	-	-	-	-	-	-	-	-	O	-	-
DR-300	-	-	-	-	-	-	-	O	-	-	-	-	-	-
DR-500	-	-	-	-	O	O	-	-	-	-	-	-	-	-
DR-700	-	-	O	-	-	-	-	-	-	-	-	-	-	-
<Lens Accessory>														
WC-DC58	-	-	-	O	-	-	-	-	O	O	-	-	-	-
WC-DC52	-	O	-	-	-	-	O	-	-	-	-	-	-	-
TC-DC58	-	-	-	O	-	-	-	-	-	O	-	-	-	-
250D 58mm	-	-	-	O	-	-	-	-	-	O	-	-	-	-
500D 58mm	-	-	-	-	-	-	-	-	O	-	-	-	-	-
250D 52mm	-	O	-	-	-	-	O	-	-	-	-	-	-	-
LA-DC58	-	-	-	O	-	-	-	-	-	O	-	-	-	-
LA-DC52	-	-	-	-	-	-	O	-	-	-	-	-	-	-
LH-DC58	-	-	-	-	-	-	-	-	O	-	-	-	-	-
TC-DC52	-	O	-	-	-	-	O	-	-	-	-	-	-	-
LA-DC52B	-	O	-	-	-	-	-	-	-	-	-	-	-	-

<Speed Lite>

220EX	-	-	-	O	-	-	-	-	O	O	-	O	-	-
380EX	-	-	-	O	-	-	-	-	O	O	-	O	-	-
550EX	-	-	-	O	-	-	-	-	O	O	-	-	-	-
420EX	-	-	-	O	-	-	-	-	O	O	-	-	-	-
(MR-14EX)	-	-	-	O	-	-	-	-	-	-	-	-	-	-

<Remote Switch>

WL-DC100	-	-	-	O	-	-	-	-	O	O	-	-	-	-
RS-8N3	-	-	-	-	-	-	-	-	-	-	-	O	-	-

<Cable, Others>

VC-100	-	O*4	-	-	-	-	O*5	-	-	-	O	O	O	O
VC-200	-	-	-	-	-	-	-	O	-	-	-	-	-	-
AVC-DC100	-	O*6	O	O	-	O	-	-	O	O	-	-	-	-
AVC-DC200	-	-	-	-	O	-	-	-	-	-	-	-	-	-
IFC-100PCS	-	-	-	-	-	-	-	-	-	-	-	O	O	O
IFC-100MC	-	-	-	-	-	-	-	-	-	-	-	O	O	O
IFC-200PCS	-	-	-	-	-	-	-	-	O	O	O	-	-	-
IFC-200PCU	-	-	-	O	O	-	-	O	O	O	O	-	-	-
IFC-200MC	-	-	-	-	-	-	-	-	O	O	O	-	-	-
IFC-300PCU	O	O	O	-	-	O	O	-	-	-	-	-	-	-
AD-PC98	-	-	-	-	-	-	-	-	O	O	O	O	O	O
DIF-100	O	O	O	O	-	O	O	-	-	-	-	-	-	-
DIF-200	-	-	-	-	O	-	-	-	-	-	-	-	-	-

*4 PS A30 only *5 PS A20 only *6 PS A40 only

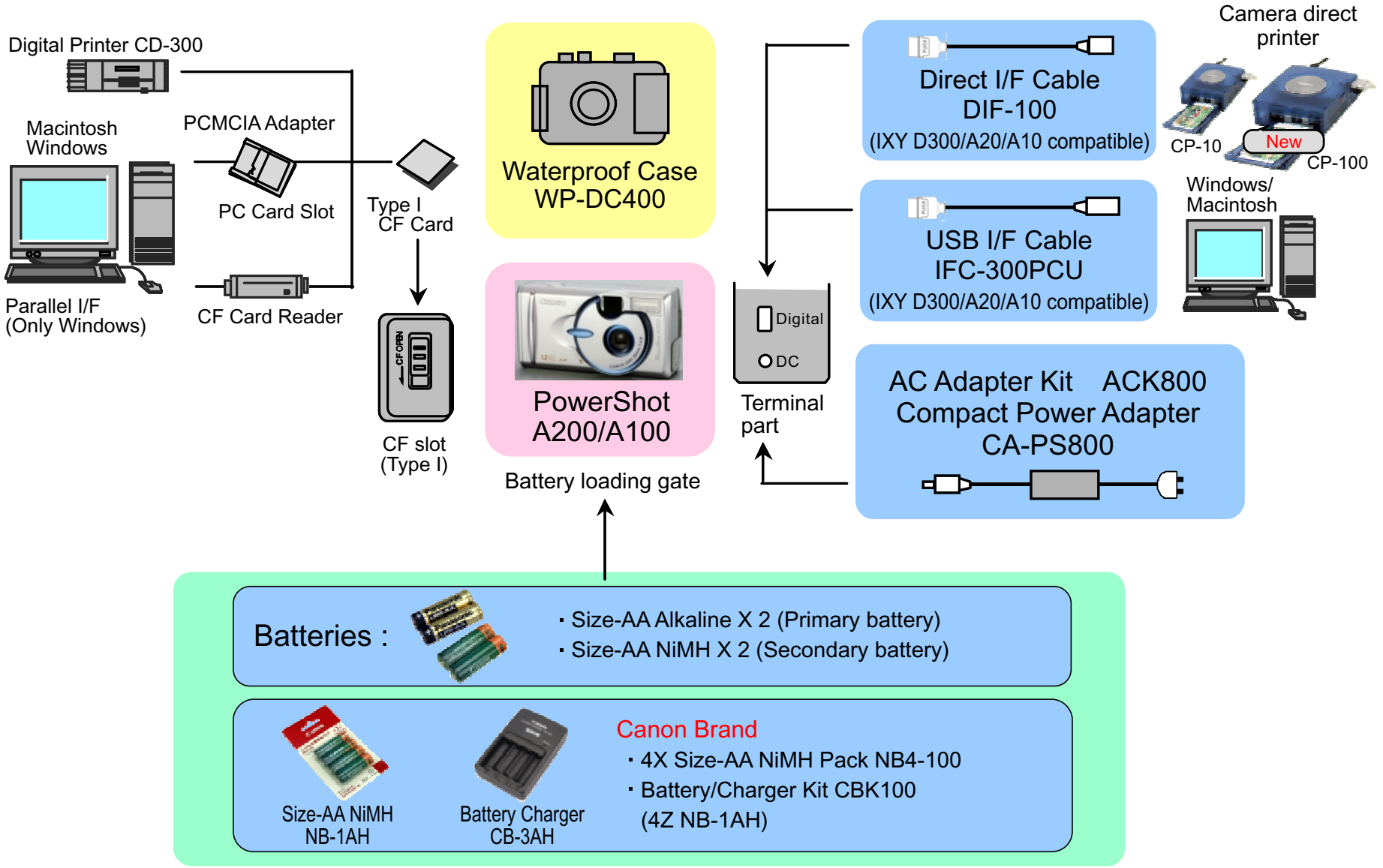
<Case>

SC-PS100	-	-	-	-	-	-	-	-	-	-	O	-	O	O
SC-PS300	-	-	-	-	O	-	-	O	-	-	-	-	-	-
SC-PS400	-	-	-	-	-	-	-	-	-	O	-	-	-	-
SC-PS500	-	-	-	-	-	O	-	-	-	-	-	-	-	-
SC-PS600	-	O	-	-	-	-	O	-	-	-	-	-	-	-
SC-PS700	-	-	-	O	-	-	-	-	-	-	-	-	-	-
SHC-PS200	-	-	-	-	-	-	-	-	-	-	-	O	-	-
SHC-PS300	-	-	-	-	-	-	-	-	O	-	-	-	-	-
SC-PS800	-	-	O	-	-	-	-	-	-	-	-	-	-	-
SC-PS900	O	-	O	-	-	-	-	-	-	-	-	-	-	-

<All Weather Case / Waterproof Case>

AW-PS100	-	-	-	-	-	-	-	-	-	-	-	-	-	O
AW-PS110	-	-	-	-	-	-	-	-	-	-	-	-	O	-
AW-PS200	-	-	-	-	O	-	-	O	-	-	-	-	-	-
WP-DC100	-	-	-	-	-	O	-	-	-	-	-	-	-	-
WP-DC200	-	-	-	-	-	-	O	-	-	-	-	-	-	-
WP-DC300	-	-	O	-	-	-	-	-	-	-	-	-	-	-
WP-DC200s	-	O	-	-	-	-	O	-	-	-	-	-	-	-
WP-DC400	O	-	-	-	-	-	-	-	-	-	-	-	-	-

5-2 System Diagram



CHAPTER 2. TECHNICAL DESCRIPTION

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   - 1.2 FLASH UNIT ---------- 2-1
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   - 2.1 Power Supply Control ---------- 2-2
     - 2.1.1 Power Supply Block Diagram ---------- 2-2
     - 2.1.2 Power Control Sequence ---------- 2-2
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     - 2.2.1 System Control ---------- 2-3
     - 2.2.2 Picture Processing ---------- 2-4
3. Troubleshooting
   - 3.1 When an Error Code is Displayed ---------- 2-5
   - 3.2 When a Problem Occurs ---------- 2-7

1. Functions of each unit

1.1 MAIN PCB ASS'Y

1) Driving the CCD Sensor.
2) Conversion of the image signal from the analog signal to the digital signal.
3) Controlling the power supply and the system by CPU. (Refer to Sections 2.1 and 2.2.)
4) Image processing, and reading and writing the image signal to and from the CF card using DSP. (Refer to Section 2.2.2.)
5) LCD drive.
6) Power supply drive (DC/DC converter).
7) Backlight for LCD drive.

1.2 FLASH UNIT

1) Flash drive and charging circuit for the flash.

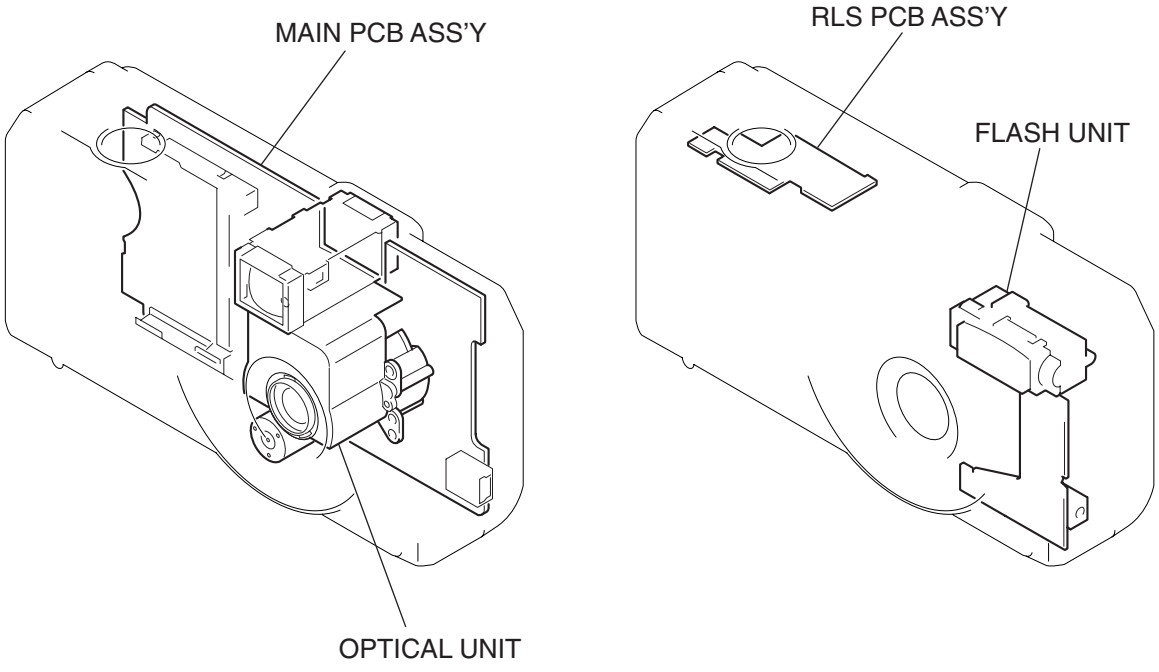


Fig. 1

2. Outline of Circuits

2.1 Power Supply Control

The power supply is controlled by the CPU mounted on the main PCB ass'y.

2.1.1 Power Supply Block Diagram

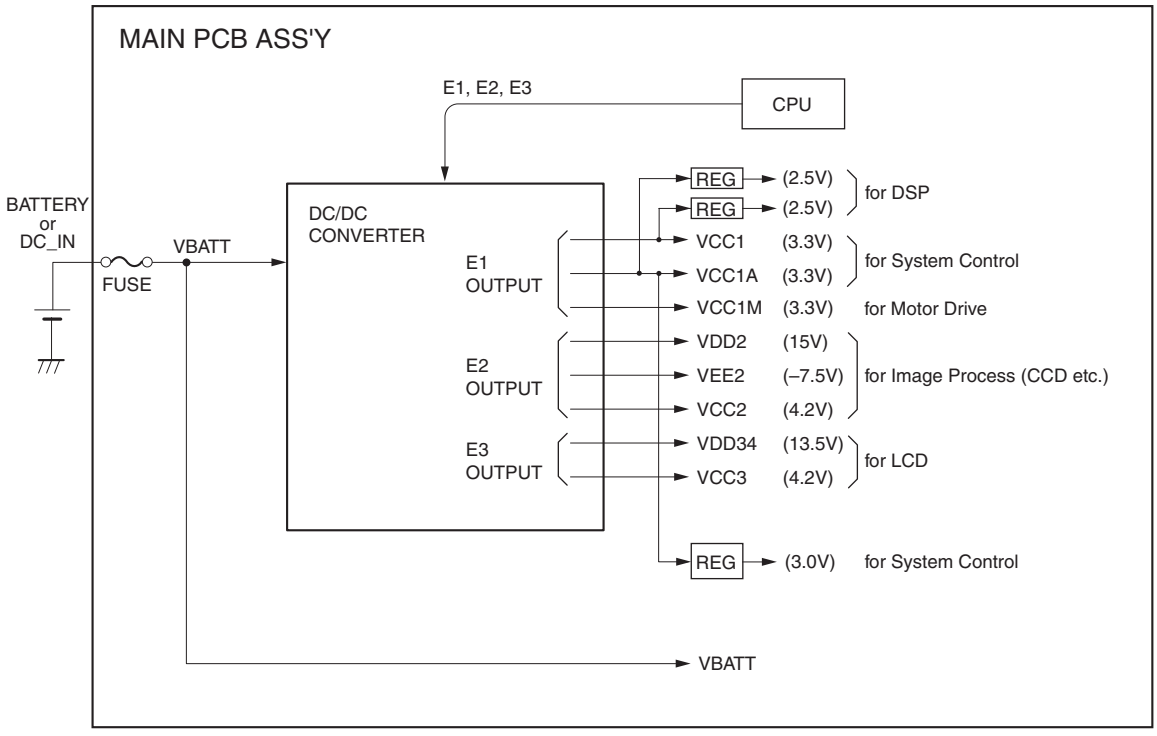
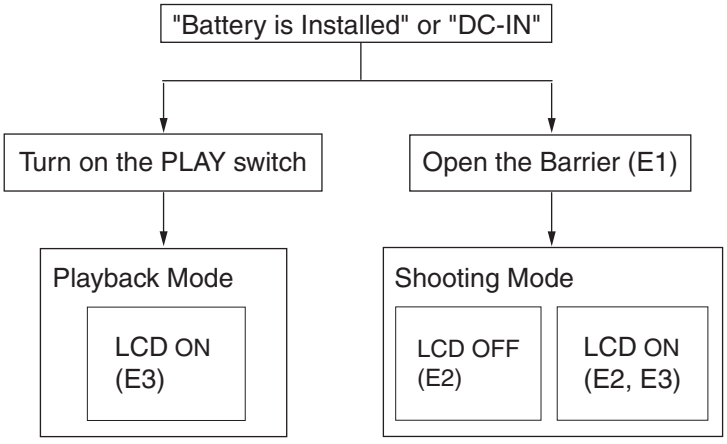


Fig. 2 Power System Block Diagram

2.1.2 Power Control Sequence



2.2 Signal Processing

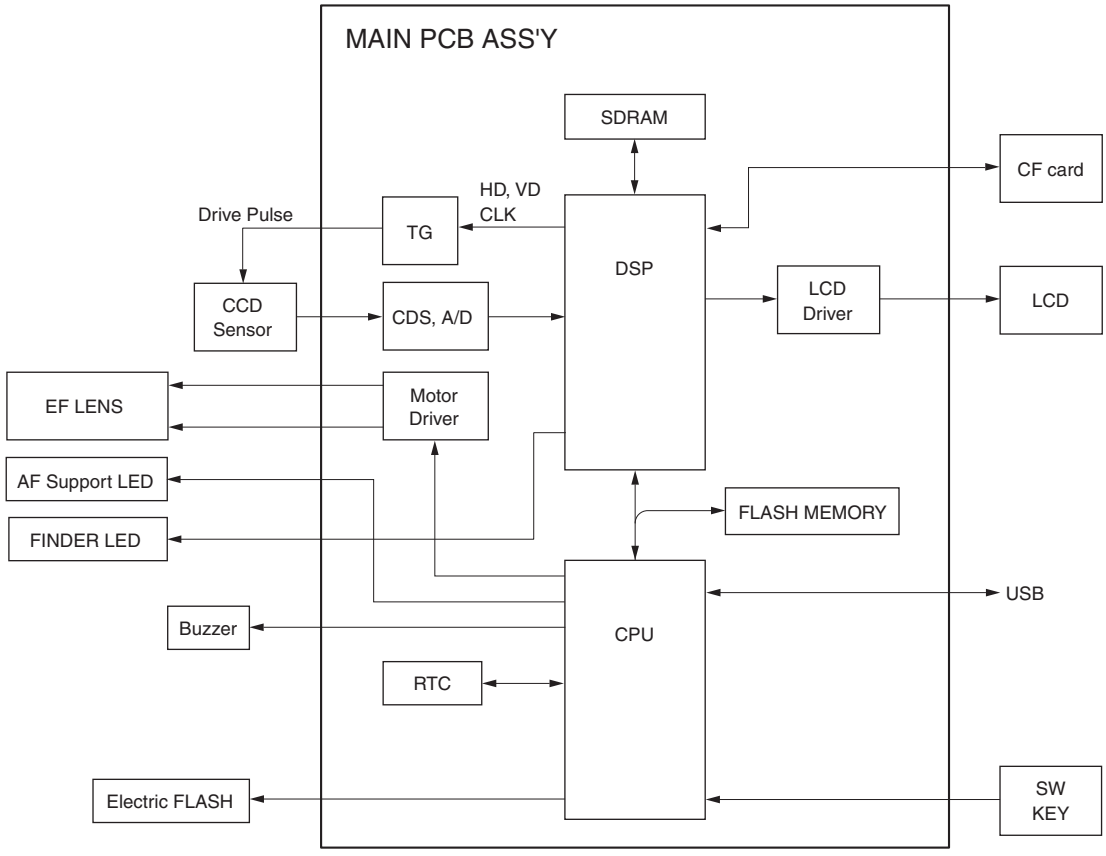


Fig. 3 Signal System Block Diagram

2.2.1 System Control

The CPU on the main PCB ass'y controls the EF lens (motor, shutter), operation switch receiver, USB communication and flowing circuits.

- TG: Creation of the CCD drive pulse
- CDS, A/D: CCD signal processing and conversion of the digital data
- LCD Driver: Driving the LCD
- FLASH MEMORY: Firmware memory
- DSP: Picture processing
- RTC: Clock count for watch
- AF Support LED: AF auxiliary, self-timer and red-eye protection also serves as a lamp
- Electric Flash: Flash and charging circuit

2.2.2 Picture Processing

1) The drive pulse of the CCD sensor is created by both clock from DSP and TG that is operated by sync. signal.
   The picture signal by the drive pulse is output from CCD sensor.
   The output signal of the CCD picture is converted to the signal processing and the digital data by the CDS and A/D converter, and is sent to the DSP.

2) The DSP circuit performs the following signal processing.
   - Processes the picture data (using the SDRAM).
   - Writes and reads the picture data to and from the CF card.
   - Outputs analog video signal to the LCD.

3) The video signal that is supplied form the DSP is controlled by the LCD driver and is displayed on the LCD.

3. Troubleshooting

3.1 When an Error Code is Displayed

[Remedy]

- Check for any abnormalities in the mounting of probable faulty parts or connector connections referring to the table below.
- Try replacing probable faulty parts referring to the below.

[NOTE]

- The error code is displayed on the LCD Monitor.
- Adjustments must be performed after the part has been replaced. For details, see the chapter of "Adjustments".

Error Code	Name	Occurrence Conditions	Cause and Probable Faulty Part
E02	AF TIME OUT	AF processing did not end within the specified time.	MAIN PCB ASS'Y
			OPTICAL UNIT
		The focus lens was not driven.	MAIN PCB ASS'Y
			OPTICAL UNIT
E03	EF TIME OUT	Auto Flash Control did not end within the specified time.	MAIN PCB ASS'Y
			OPTICAL UNIT
E09	JPEG DMA TIME OUT	JPEG processing did not end within the specified time.	MAIN PCB ASS'Y
E14	UNKOWN	When unkown error, cause of which is not known, occurs.	UNKOWN
E16	IMAGING TIME OUT	When communication between CPU and peripheral IC is not completed within the specified time during recording using EVF or after completion of recording.	MAIN PCB ASS'Y
E23	CF NO SPACE	When the CF becomes full during writing of photographed images to CF, writing is repeatedly performed with the JPEG compression ratio successively increased to reduce the size of the image file until it can be successfully written to CF. This error occurs when writing of the JPEG image file fails after 10 retries at increasingly higher compression ratios.	MAIN PCB ASS'Y
E24	POWER ON ERROR	The power of the imaging circuit on the MAIN PCB ASS'Y was not detected.	MAIN PCB ASS'Y
E25	FOCUS PI ERROR	Detection of the focus PI (photo-interrupter) failed.	OPTICAL UNIT
			MAIN PCB ASS'Y
E26	CAPTURE TIME OUT	Writing of the photograph image to SDRAM did not end within the specified time.	MAIN PCB ASS'Y

Error Code	Name	Occurrence Conditions	Cause and Probable Faulty Part
E27	CF WRITE TIME OVER	Free area could not be secured in the buffer for the photograph image within the specified time in the continuous shooting mode.	CF CARD MAIN PCB ASS'Y
E30	POWER OFF ERROR	The camera power was turned OFF while the image was being recorded to the CF Card. (The error code is displayed when the camera is next turned ON.) * This error may occur after E23.	The battery or DC plug was removed while the image was being recorded to the CF Card. → Remedy: Restart the camera.
E50	CF FORMAT ERROR	The CF Card could not be formatted properly.	CF CARD
E51	CF ACCESS ERROR	When image data cannot be read from CF normally.	CF CARD
E52	QUICK REVIEW ERROR	Review of the photograph image failed.	MAIN PCB ASS'Y

3.2 When a Problem Occurs

[Remedy]

- Check for any abnormalities in the mounting of probable faulty parts or connector connections referring to the table below.
- Try replacing probable faulty parts referring to the table below.

[NOTE]

- Adjustments must be performed after the part has been replaced. For details, see the chapter of "Adjustments".

Problem (when an error code is not displayed)	Cause and Probable Faulty Part
The camera does not work.	MAIN PCB ASS'Y
	REAR COVER UNIT
	FLASH UNIT
The image is not displayed on the LCD Monitor.	MAIN PCB ASS'Y
	BUTTON PCB ASS'Y
	LCD PANEL
	BACK LIGHT UNIT
The photograph image is abnormal.	OPTICAL UNIT
	MAIN PCB ASS'Y
The zoom does not function.	MAIN PCB ASS'Y
	BATTERY BOX UNIT
	REAR COVER UNIT
The Built-in Flash does not fire.	FLASH UNIT
	MAIN PCB ASS'Y
Communications with the personal computer is not possible.	MAIN PCB ASS'Y
The CF card or Micro Drives is not recognized.	CF CARD
	REAR COVER UNIT
	MAIN PCB ASS'Y
Buttons/The Mode dial do not work.	REAR COVER UNIT
	RLS PCB ASS'Y

CHAPTER 3. REPAIR INSTRUCTION

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1. Before Starting the Repair Work

Be sure to read the following precaution before starting the repair work.

1.1 Precaution on Flash High Tension Circuit

- When the FRONT COVER UNIT and REAR COVER UNIT are removed, be sure to discharge the main capacitor.
  (Discharging resistor : 1 kΩ, approx. 5 W.)
- First contact the GND ⊖ terminal of the main capacitor with the discharging resistor. Then contact the positive ⊕ terminal of the main capacitor.

CAUTION:
Be careful of electric shock because the circuit is the high tension circuit.

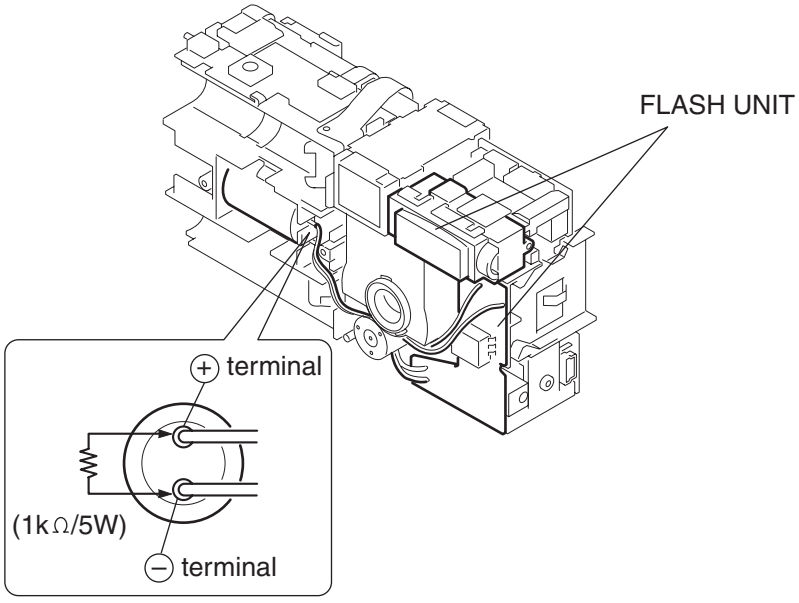


Fig. 3-1 Precaution on flash high tension circuit

1.2 List of Tools

The following tools are used for the re-assembling during service.

(1) List of tools

New	Name of tools	Part No.	Remarks
	Screwdriver (Local Purchase)		
	Tweezers (Local Purchase)		
	Soldering iron (Local Purchase)		

1.3 List of Supplies

The following supplies are used for the re-assembling during service.

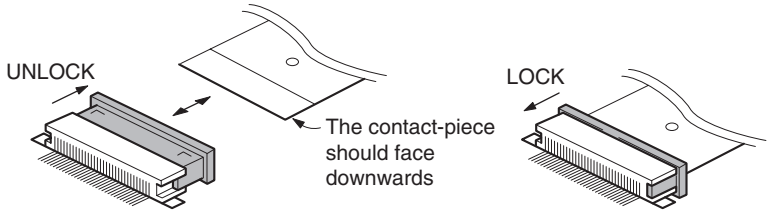
(1) List of supplies

New	Name of supplies	Part No.	Remarks
	ADHESIVE TAPE SONY T4000	CY4-6012-000	Double-sided Tape
	ADHESIVE TAPE 3M No.56	CY4-6018-000	Insulation Tape
	DIA BOND No.1663G	CY9-8129-000	
	Solder (Local Purchase)		

1.4 Flexible Connectors

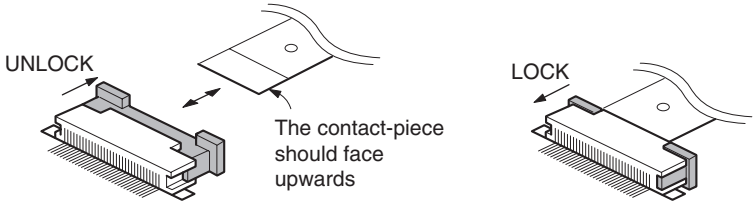
This product uses the three types of the flexible connectors.

① Type A



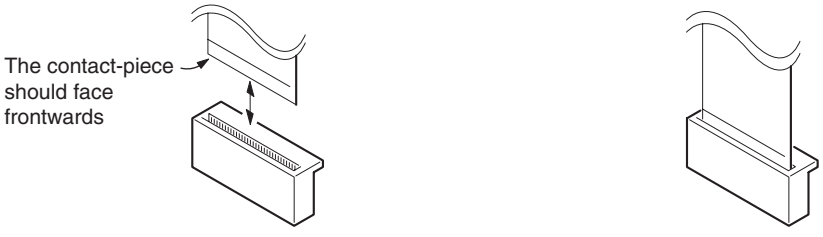
Unlocked state　　Locked state

② Type B



Unlocked state　　Locked state

③ Type C



Unconnected state　　Connected state

Fig. 3-2 Flexible connectors

CAUTIONS:

1. For the connectors of Type A and Type B, set them to the unlocked state before removing and inserting flexible card. After flexible card is inserted, set them to the locked state.
2. The flexible card is equipped with the holes as shown. Use them for removal and insertion by inserting the tweezers into them as required.

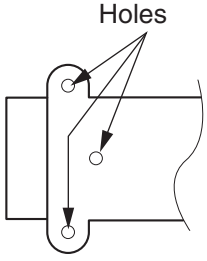
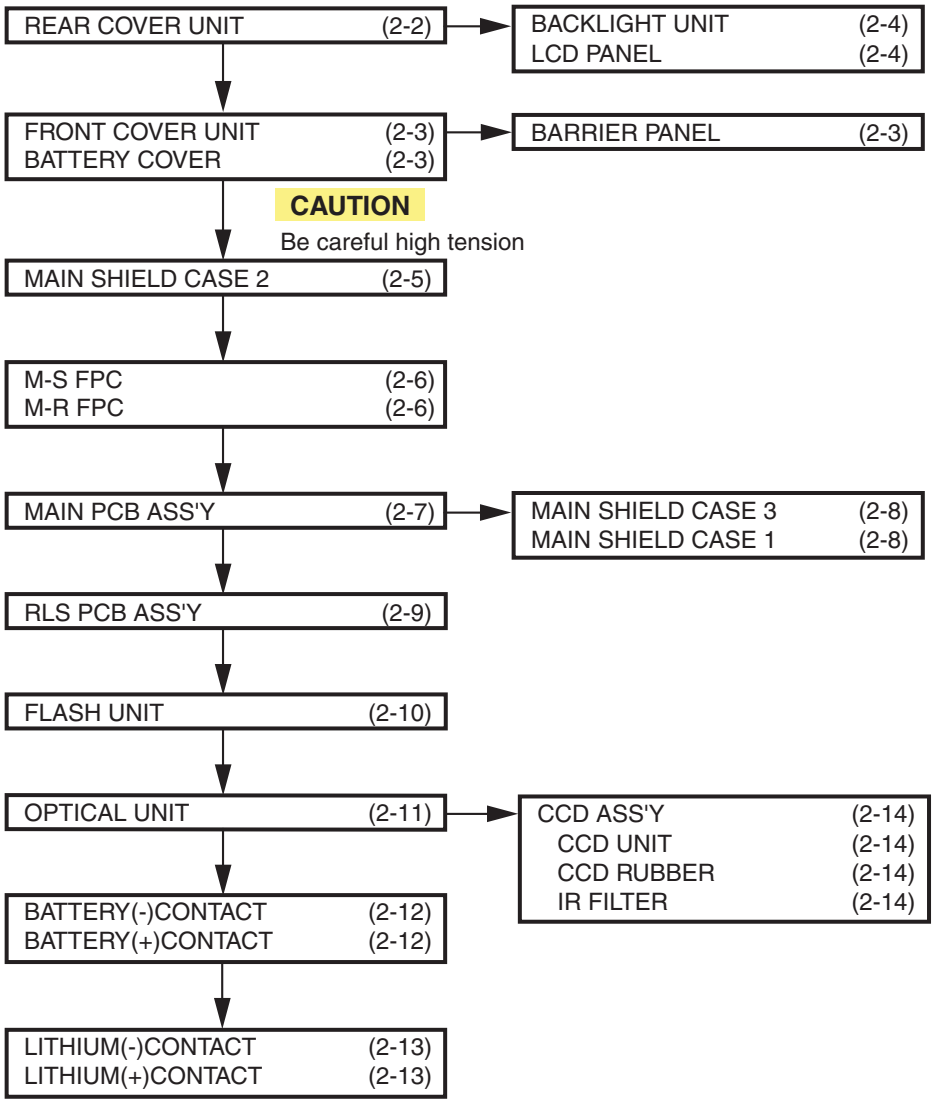


Fig. 3-3 Holes for removal

2. Disassembly/Assembly

2.1 Procedure

Disassembling procedure of PowerShot A100/A200 is shown by the following flowchart.
Reverse the disassembling procedure to reassemble them. ∗ The pages to refer are shown in parenthesis ( ).



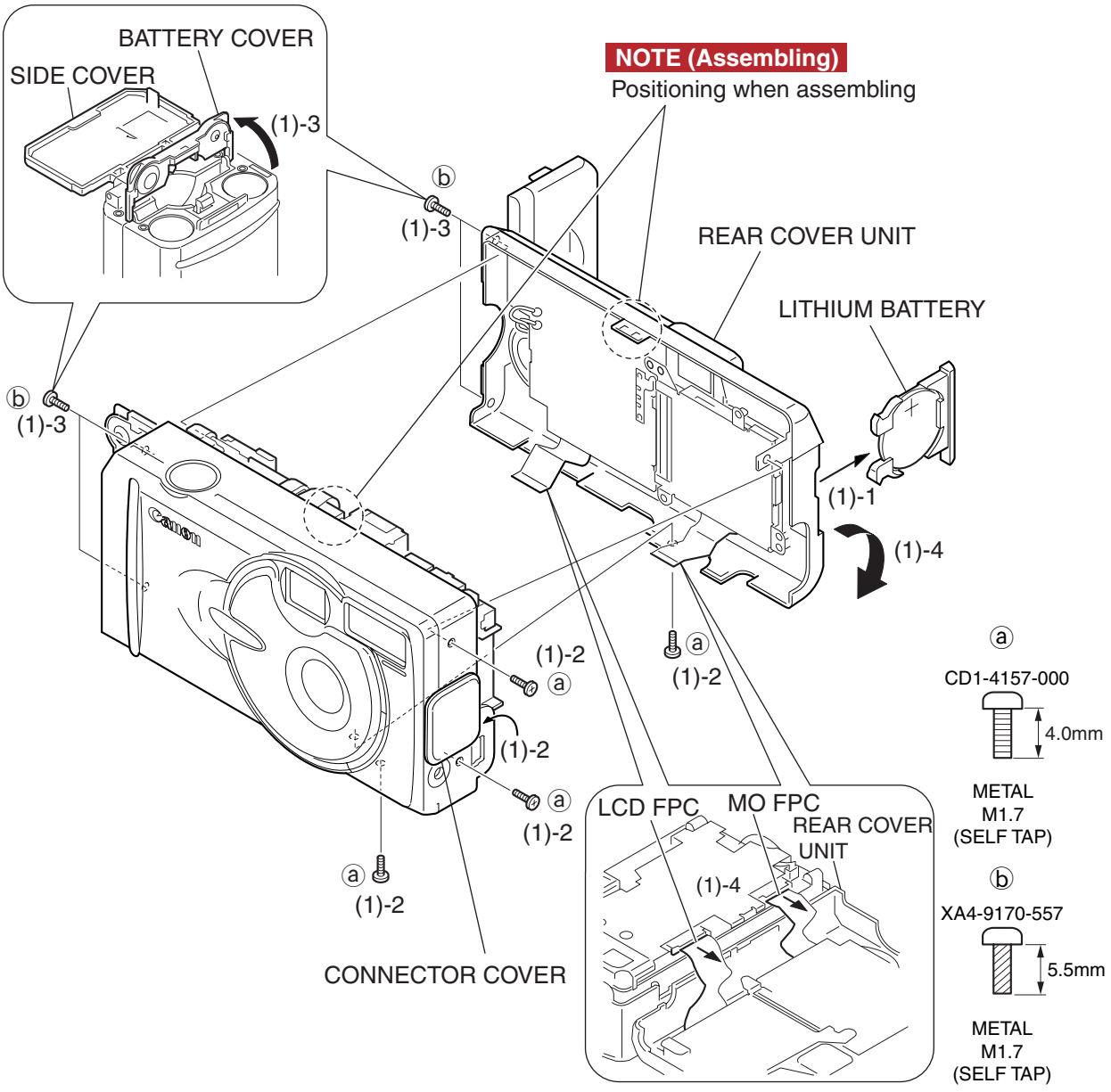


Fig. 3-4 REAR COVER UNIT

2.2 REAR COVER UNIT

(1) REAR COVER UNIT

1. Remove the Lithium Battery.
2. Remove the four screws ⓐ.
   Remove one screw among them by turning the CONNECTOR COVER in the direction of the arrow.
3. Open the SIDE COVER and BATTERY COVER in the direction of the arrow and remove the four screws ⓑ.
4. Open the REAR COVER UNIT in the direction of the arrow and remove it by disconnecting the two flexible printed wired boards (LCD FPC and MO FPC).

NOTE (Assembling)

Align the positioning dowel of the REAR COVER UNIT.

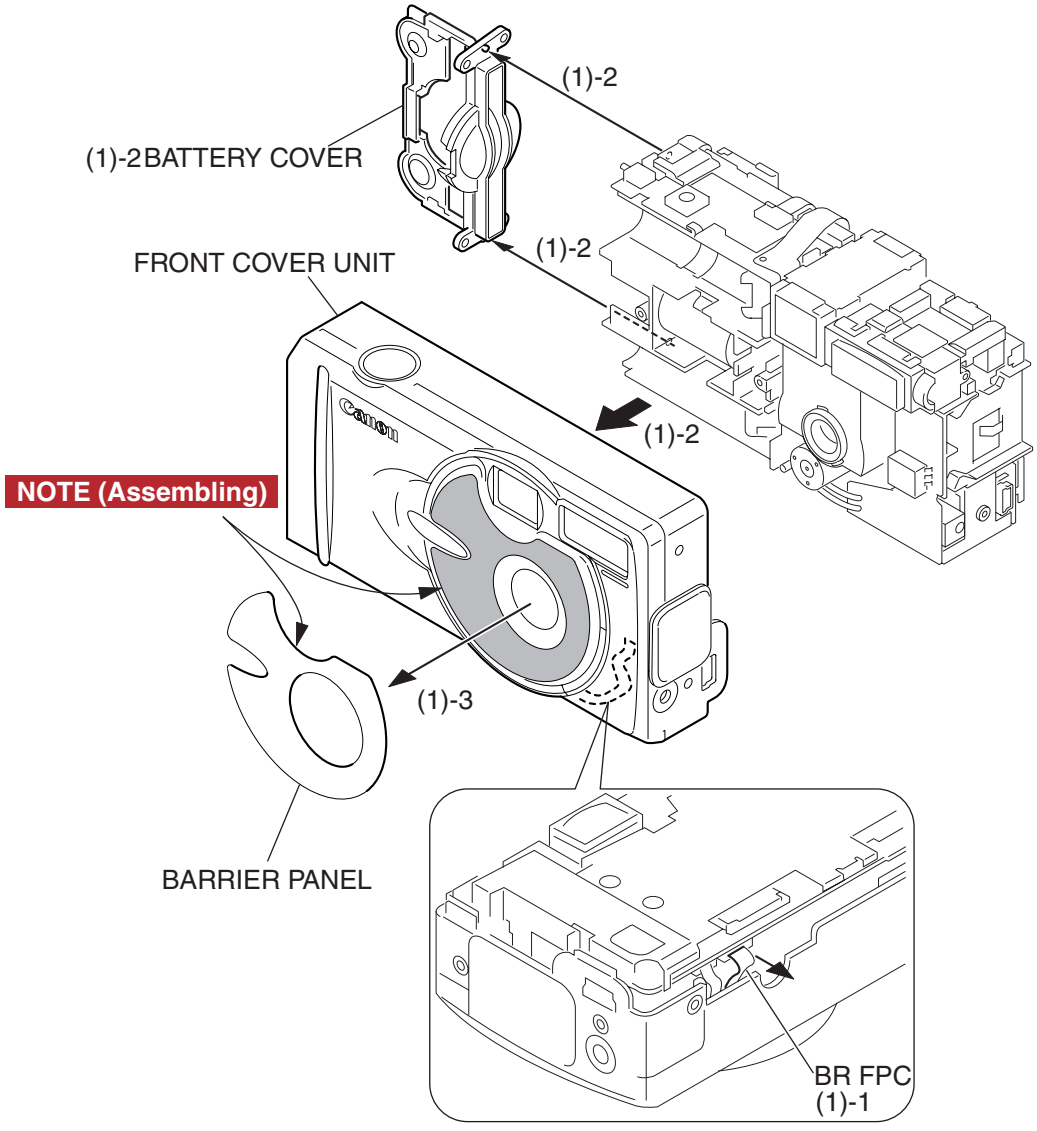


Fig. 3-5 FRONT COVER UNIT, BATTERY COVER

2.3 FRONT COVER UNIT, BATTERY COVER

(1) FRONT COVER UNIT, BATTERY COVER

1. Disconnect the BR FPC.
2. Remove the FRONT COVER UNIT in the direction of the arrow. At the same time, remove the BATTERY COVER in the direction of the arrow too.
3. Remove the BARRIER PANEL.

NOTE (Assembling)

When assembling, apply the DIA BOND1663G.

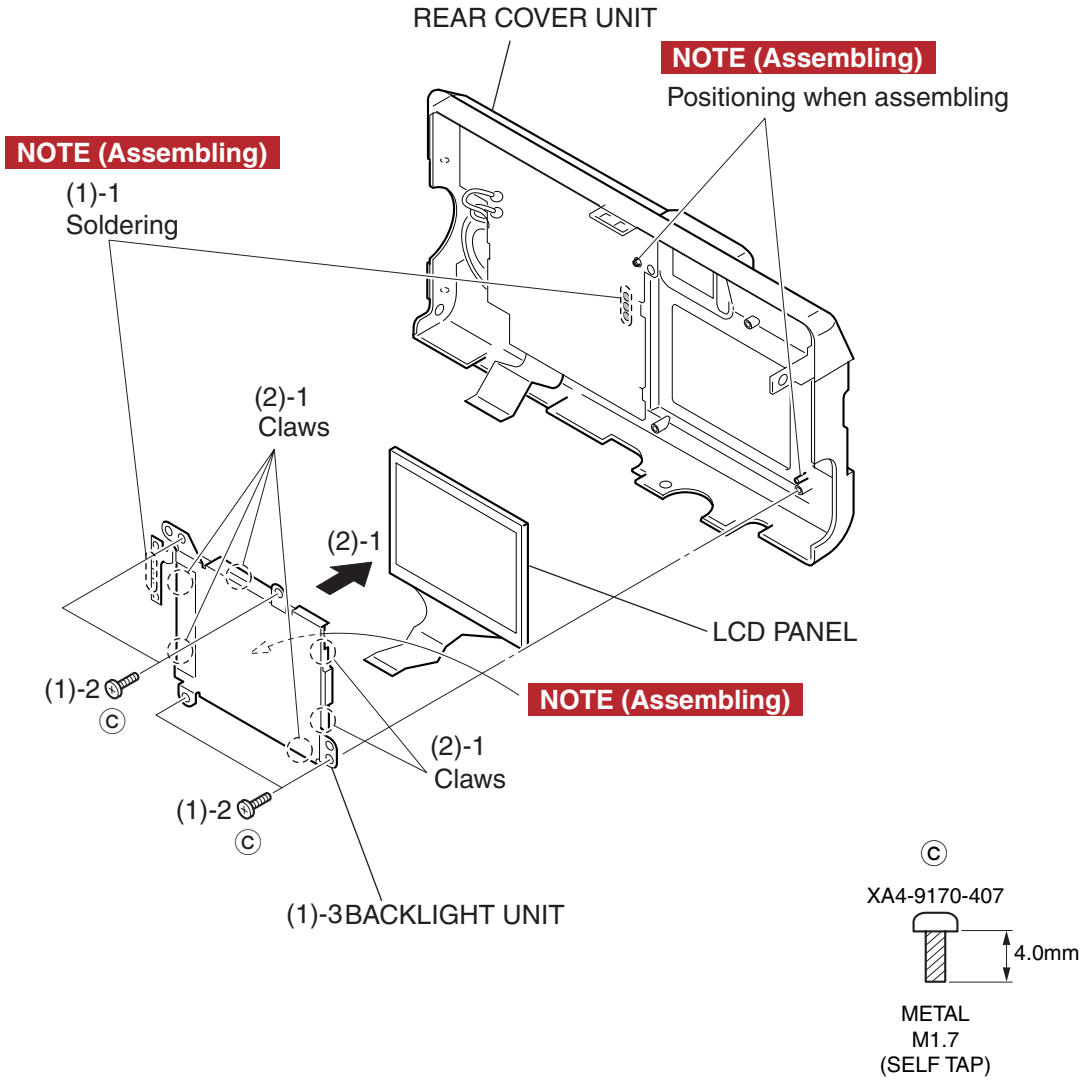


Fig. 3-6 BACKLIGHT UNIT, LCD PANEL

2.4 BACKLIGHT UNIT, LCD PANEL

(1) BACKLIGHT UNIT

1. Remove soldering at three locations.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

2. Remove the four screws Ⓒ.
3. Remove the BACKLIGHT UNIT.

NOTE (Assembling)

Align the two positioning dowels of the REAR COVER UNIT at each location.

(2) LCD PANEL

1. Release the six claws in the top, bottom, right and left, and remove the BACKLIGHT UNIT and LCD PANEL.

NOTE (Assembling)

The BACKLIGHT supplied as the service part had the protection sheet. Remove it.

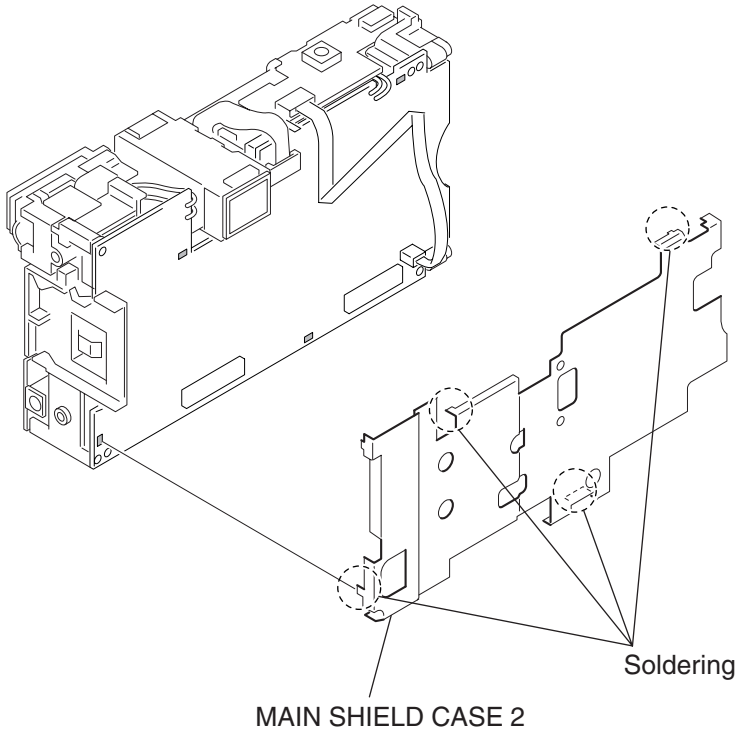


Fig. 3-7 MAIN SHIELD CASE 2

2.5 MAIN SHIELD CASE 2

(1) MAIN SHIELD CASE 2

1. Remove soldering at four locations.
2. Remove the MAIN SHIELD CASE 2.

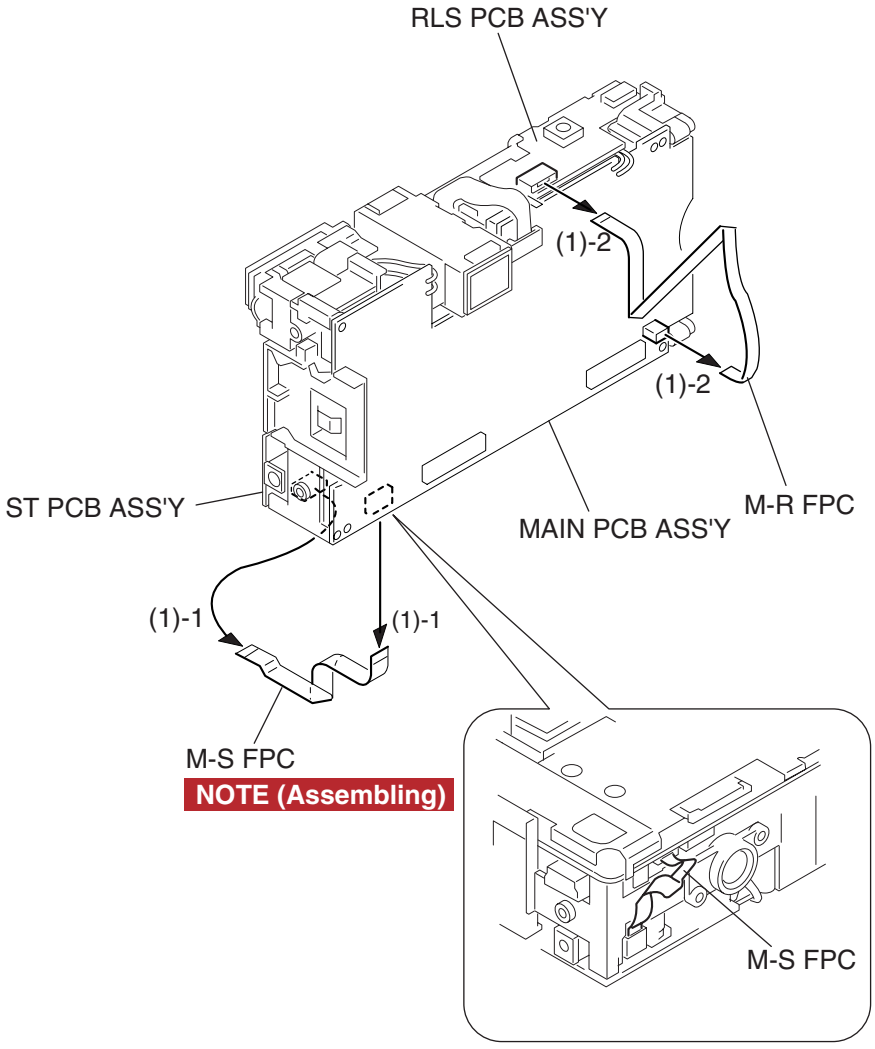


Fig. 3-8 M-S FPC, M-R FPC

2.6 M-S FPC, M-R FPC

(1) M-S FPC

1. Disconnect the M-S FPC from the connector on the ST PCB ASS'Y and the connector of the MAIN PCB ASS'Y.

NOTE (Assembling)

When assembling, fold the M-S FPC in trisection as shown in the illustration.
When inserting the M-S FPC into the connector on the ST PCB ASS'Y side, loosen the two screws of the ST PCB ASS'Y.

(2) M-R FPC

1. Disconnect the M-R FPC from the connector of the RLS PCB ASS'Y and the connector of the MAIN PCB ASS'Y.

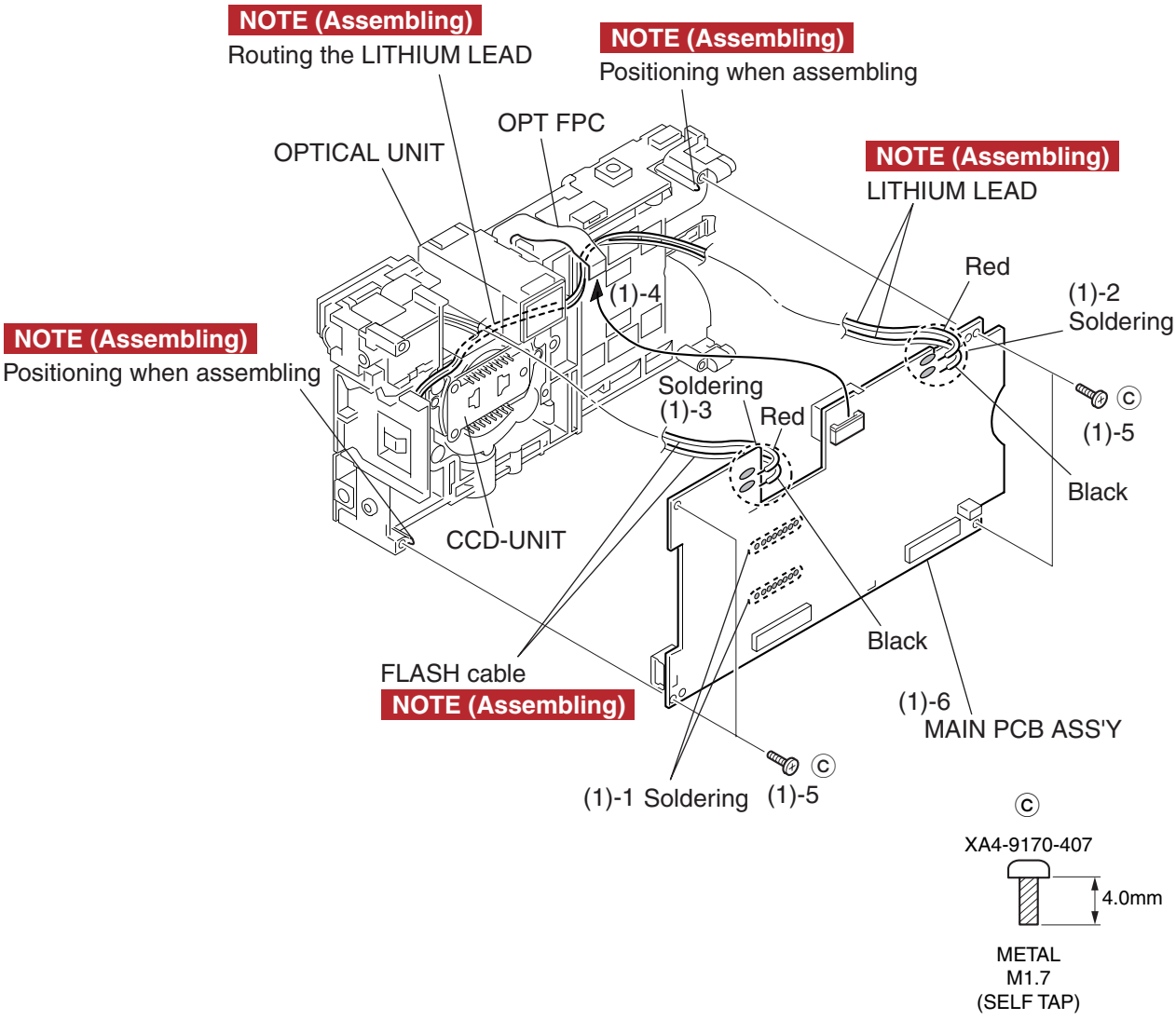


Fig. 3-9 MAIN PCB ASS'Y

2.7 MAIN PCB ASS'Y

(1) MAIN PCB ASS'Y

1. Remove soldering at sixteen locations where the CCD-UNIT pins are fixed.
2. Remove soldering at two locations and remove the two LITHIUM LEADs (red and black).

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.
For routing the LITHIUM LEADs, pass them between MAIN FRAME and OPTICAL UNIT.

3. Remove soldering at two locations and remove the two FLASH cables (red and black).

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

4. Disconnect the OPT FPC from the connector of the MAIN PCB ASS'Y.
5. Remove the four screws ⓒ.
6. Remove the MAIN PCB ASS'Y.

NOTE (Assembling)

Align the two positioning dowels of the MAIN FRAME at each location.

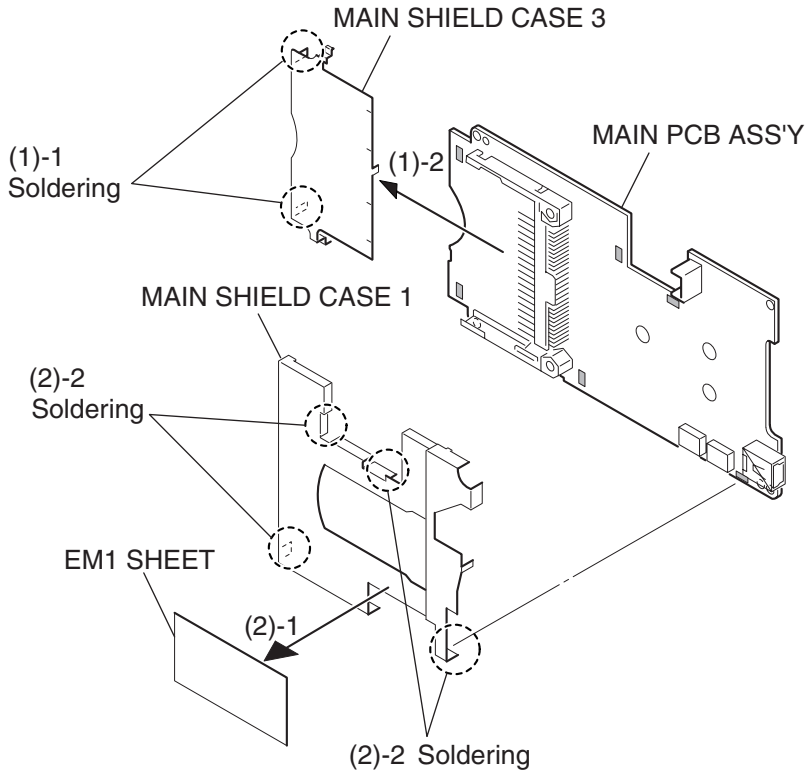


Fig. 3-10 MAIN SHIELD CASE 3, MAIN SHIELD CASE 1

2.8 MAIN SHIELD CASE 3, MAIN SHIELD CASE 1

(1) MAIN SHIELD CASE 3

1. Remove soldering at two locations.
2. Remove the MAIN SHIELD CASE 3 in the direction of the arrow.

(2) MAIN SHIELD CASE 1

1. Remove the EM1 SHEET.
2. Remove soldering at four locations.
3. Remove the MAIN SHIELD CASE 1.

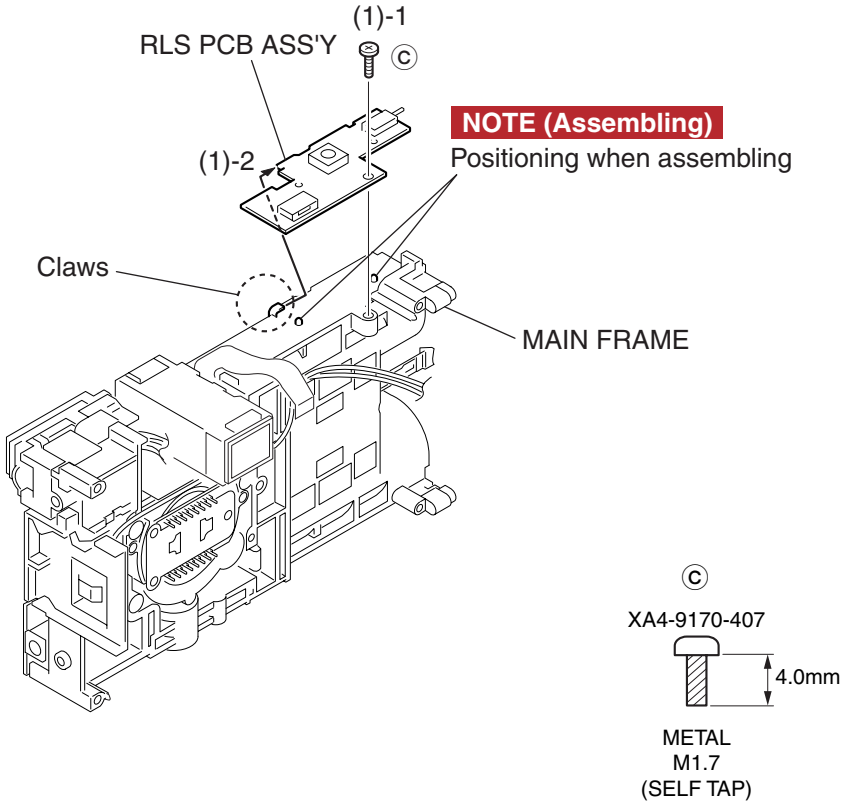


Fig. 3-11 RLS PCB ASS'Y

2.9 RLS PCB ASS'Y

(1) RLS PCB ASS'Y

1. Remove the screw ⓒ.
2. While taking care of the claws, remove the RLS PCB ASS'Y.

NOTE (Assembling)

Align the two positioning dowels of the MAIN FRAME at each location.

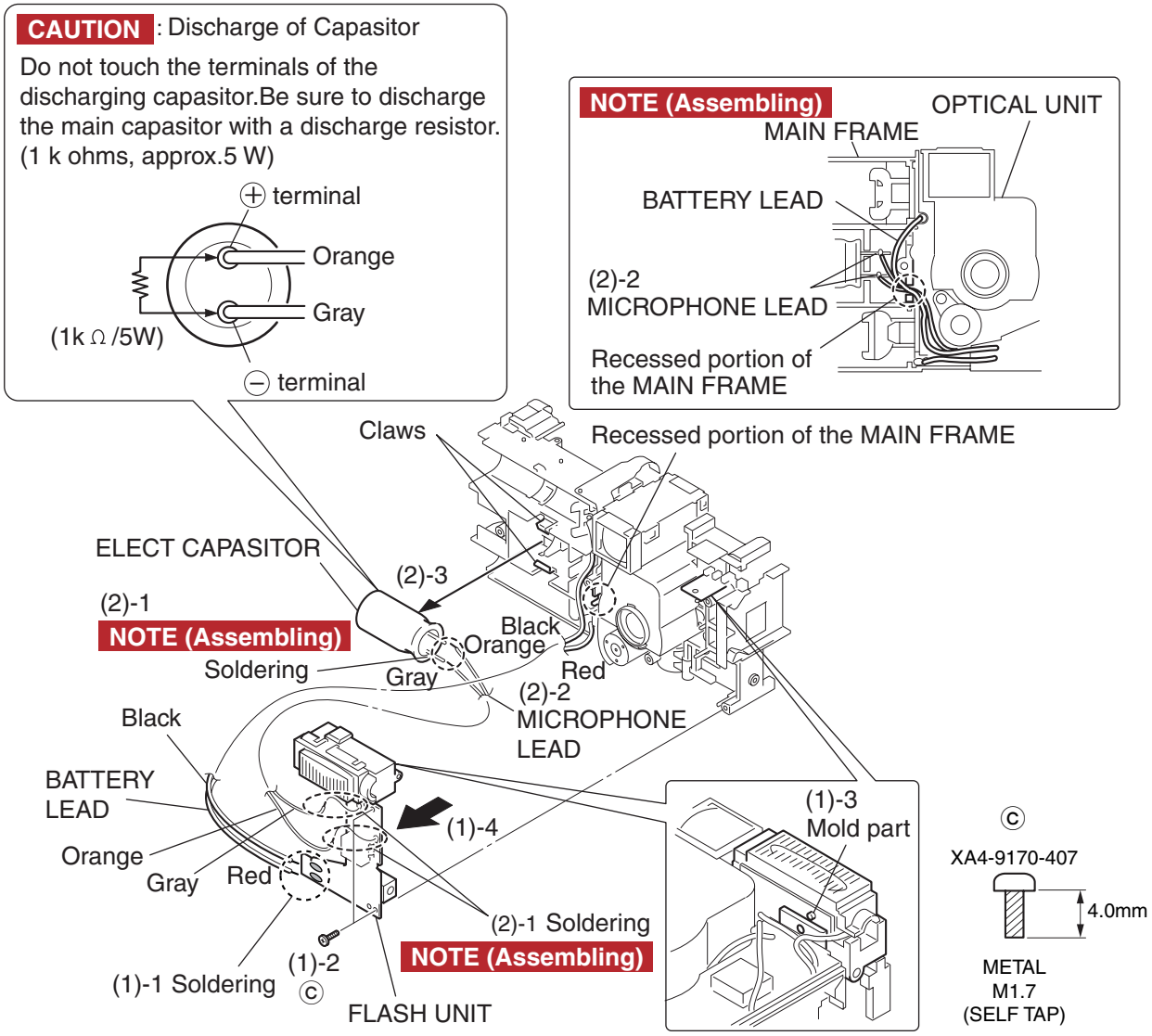


Fig. 3-12 FLASH UNIT

2.10 FLASH UNIT

CAUTION

Be sure to discharge the main capacitor with a discharging resistor.

(1) FLASH UNIT

1. Remove soldering at two locations and remove the two BATTERY LEADs (red and black).
2. Remove the two screws ⓒ.
3. Insert the sharp point tweezers between the mold part of the FLASH UNIT and MAIN FRAME and remove the mold part of the FLASH UNIT from the dowel.
4. Remove the FLASH UNIT in the direction of the arrow.

(2) ELECT CAPACITOR

1. Remove soldering at four locations.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

2. Remove the two MICROPHONE LEADs (gray and orange).

NOTE (Assembling)

Route the MICROPHONE LEAD through the recessed portion of the MAIN FRAME and route it under the BATTERY LAED.

3. While taking care of the claws, remove the ELECT CAPACITOR.

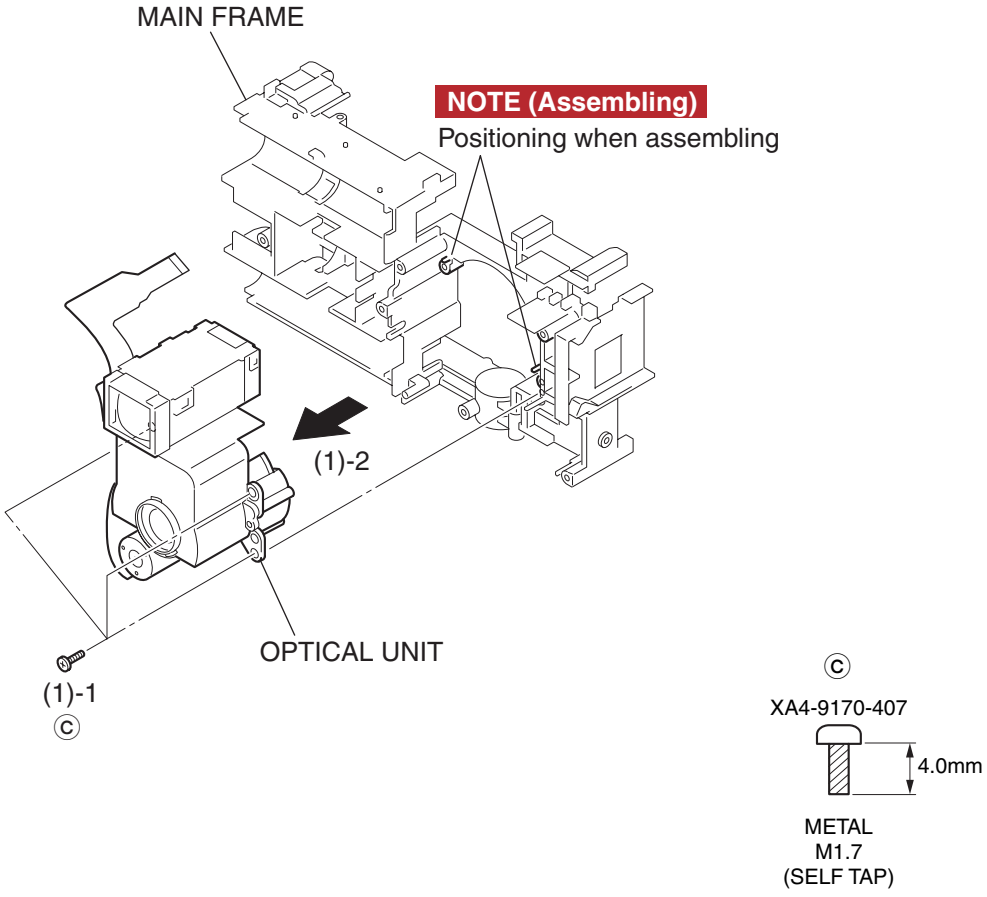


Fig. 3-13 OPTICAL UNIT

2.11 OPTICAL UNIT

(1) OPTICAL UNIT

1. Remove the three screws ⓒ.
2. Remove the OPTICAL UNIT in the direction of the arrow.

NOTE (Assembling)

Align the two positioning dowels of the MAIN FRAME at each location.

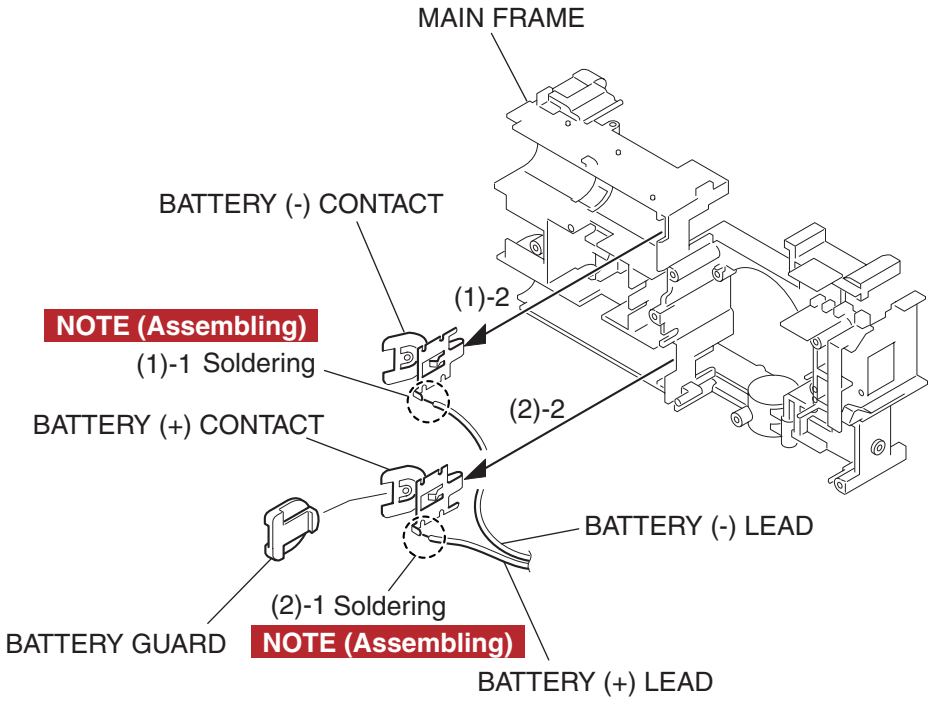


Fig. 3-14 BATTERY (-) CONTACT, BATTERY (+) CONTACT

2.12 BATTERY (-) CONTACT, BATTERY (+) CONTACT

(1) BATTERY (-) CONTACT, BATTERY (-) LEAD

1. Remove soldering and remove the BATTERY (-) LEAD.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

2. Remove the BATTERY (-) CONTACT in the direction of the arrow.

(2) BATTERY (+) CONTACT, BATTERY (+) LEAD

1. Remove soldering and remove the BATTERY (+) LEAD.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

2. Remove the BATTERY GUARD and remove the BATTERY (+) CONTACT in the direction of the arrow.

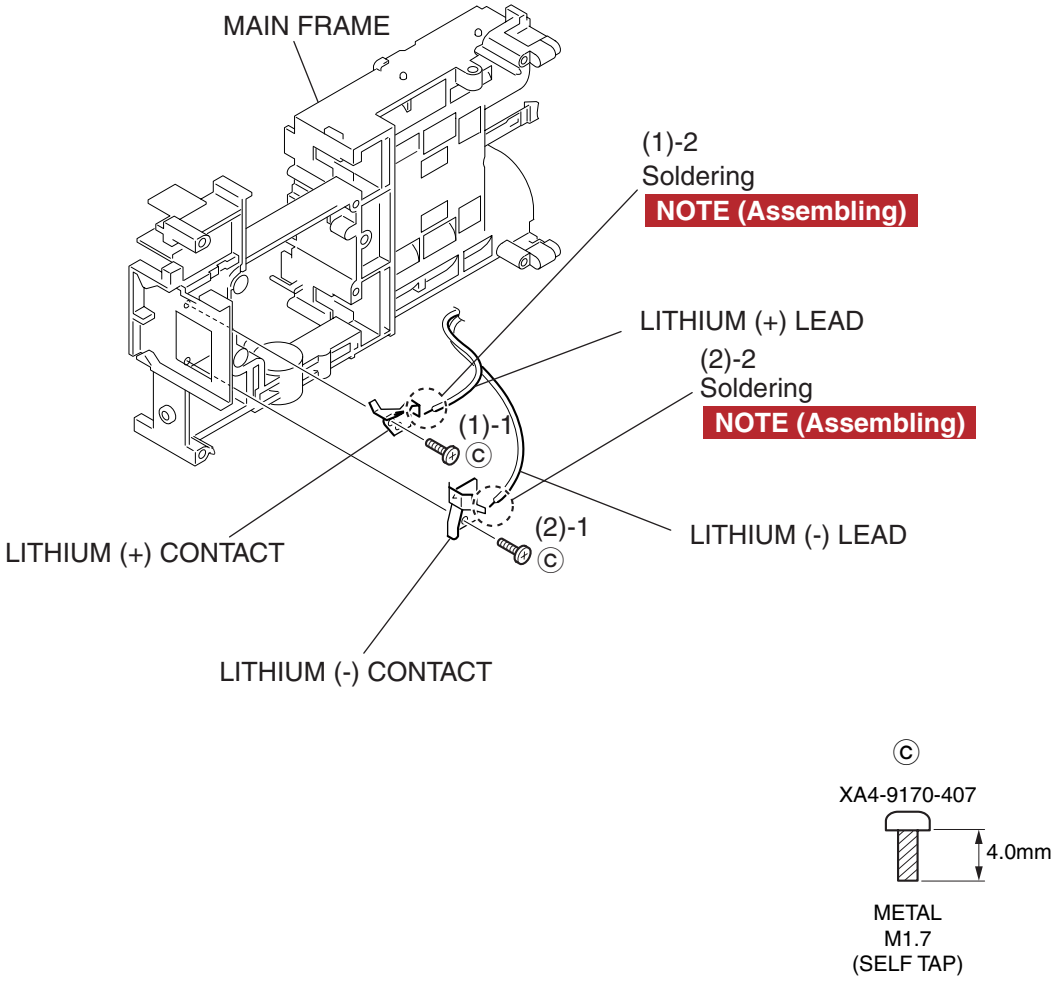


Fig. 3-15 LITHIUM (+) CONTACT, LITHIUM (-) CONTACT

2.13 LITHIUM (+) CONTACT, LITHIUM (-) CONTACT

(1) LITHIUM (+) CONTACT, LITHIUM (+) LEAD

1. Remove the screw Ⓒ and remove the LITHIUM (+) CONTACT.
2. Remove soldering and remove the LITHIUM (+) LEAD.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

(2) LITHIUM (-) CONTACT, LITHIUM (-) LEAD

1. Remove the screw Ⓒ and remove the LITHIUM (-) CONTACT.
2. Remove soldering and remove the LITHIUM (-) LEAD.

NOTE (Assembling)

After soldering, apply the DIA BOND1663G.

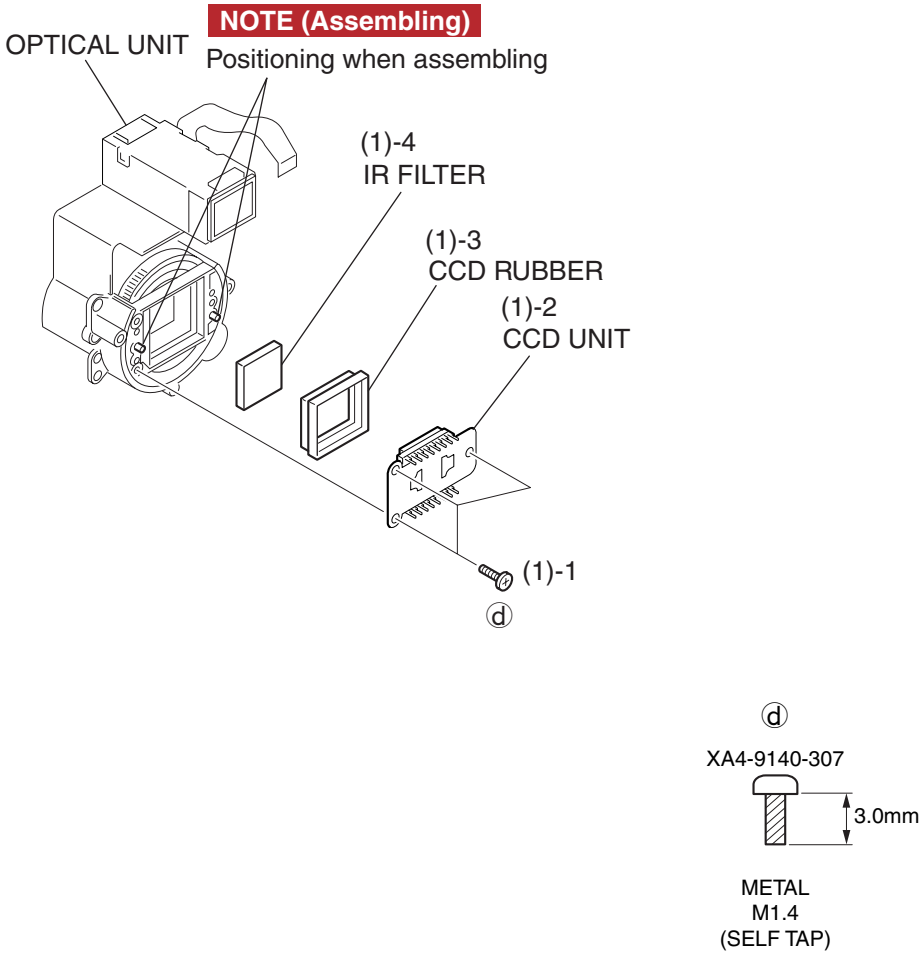


Fig. 3-16 CCD ASS'Y

2.14 CCD ASS'Y

(1) CCD UNIT, CCD RUBBER, IR FILTER

1. Remove the three screws ⓓ.
2. Remove the CCD UNIT.

NOTE (Assembling)

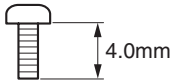
Align the two positioning dowels of the OPTICAL UNIT at each location.

3. Remove the CCD RUBBER.
4. Remove the IR FILTER.

2.15 Screw List

ⓐ

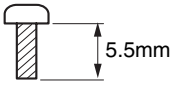
CD1-4157-000



METAL
M1.7
(SELF TAP)

ⓑ

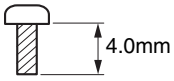
XA4-9170-557



METAL
M1.7
(SELF TAP)

ⓒ

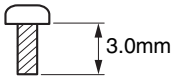
XA4-9170-407



METAL
M1.7
(SELF TAP)

ⓓ

XA4-9140-307



METAL
M1.4
(SELF TAP)

3. Adjustments

3.1 Replacement Parts and Adjustment Items

PowerShot A100/A200 requires electrical adjustments when certain parts are replaced.
The table below indicates the adjustments required for the respective part replacements.
For all other parts not listed below, no electrical adjustments are necessary after replacement.

Adjustment Items / Replacement Part	CCD Adjustment	Optical Unit Adjustment	Imaging Process Adjustment	Pixel Dot Adjustment	Flash Adjustment
CCD UNIT	● #1	● #2	● #3	● #4	● #5
OPTICAL UNIT		●			
FLASH UNIT					●
MAIN PCB ASS'Y	○	○	○	○	○
LCD PANEL					
BACK LIGHT UNIT					

● : Adjustment is necessary after replacement.
○ : Adjustment is necessary after replacement.
(Adjustment is not necessary, only if the adjustment data has been saved and then transferred after the part is replaced.)
Blank : Adjustment is unnecessary.

* When CCD UNIT is replaced, adjust certainly at the procedure as below.

#1. CCD Adjustment

#2. Optical Unit Adjustment

#3. Imaging Process Adjustment

#4. Pixel Dot Adjustment

#5. Flash Adjustment

3.2 Adjustment Tools

The following tools are required for electrical adjustment.

DESCRIPTION	PARTS NO.	REMARKS
PC/AT-Compatible Machine (Windows98 pre-installed Model, USB port)	—	Local purchase
Adjustment Software (CD-ROM)	CY8-4377-031	CD-ROM, SERVICE MANUAL (J/E)
Compact Power Adapter CA-PS800	—	Enclosed in camera kit (or Local purchase)
INTERFACE CABLE IFC-300PCU (USB Cable)	—	(or Local purchase)
Brightness Box (light source A)	—	Local purchase
Color Viewer (5600° K)	DY9-2039-100	(or Local purchase)
Standard Color Bar Chart	DY9-2002-000	(or Local purchase)
Standard 18% Gray Chart	CY4-6016-000	CHART, 18%GRAY
AF Chart	—	*1
W-10 Filter *2	CY9-1543-000	(or Local purchase)
C-12 Filter	DY9-2029-000	(or Local purchase)
ND-2 Filter	—	Local purchase
ND-4 Filter	—	Local purchase
ND-8 Filter	—	Local purchase
Light-Shielding Cloth (500 × 500 or larger)	—	Local purchase
Tripod	—	Local purchase

*1 Print the Auto Focus Chart on the legal size paper from the “AFChart_Legal.pdf ” (in the folder of this CD-ROM, :\Adjust\Chart).
Print the Auto Focus Chart on the A3 size paper from the “AFChart_A3.pdf ”.
Make use of the Auto Focus Chart for the PowerShot A100/A200.

*2 2pcs. required.

3.3 Before Starting Electrical Adjustments

3.3.1 TWAIN Driver Installation

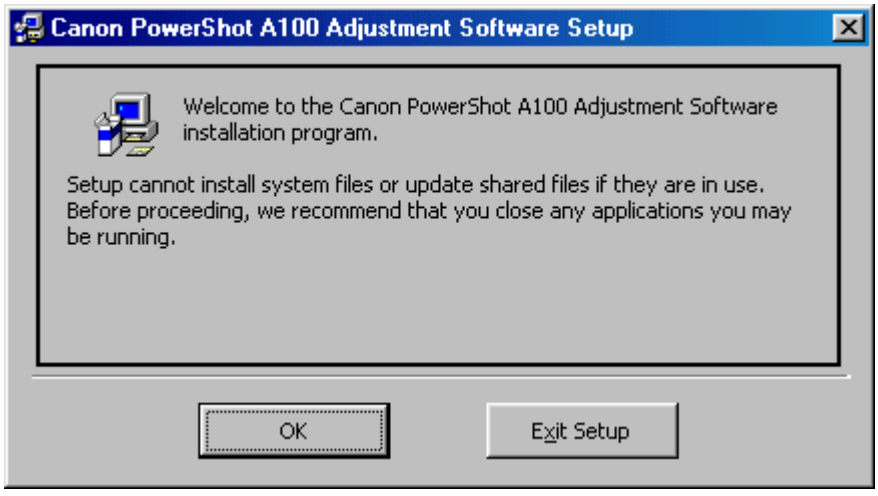
Install the USB Driver for Adjustment in the CD-ROM to PC.
("This Adjustment Software" is impossible when the RS-232C TWAIN driver is used.)

3.3.2 Installing the Adjustment Software

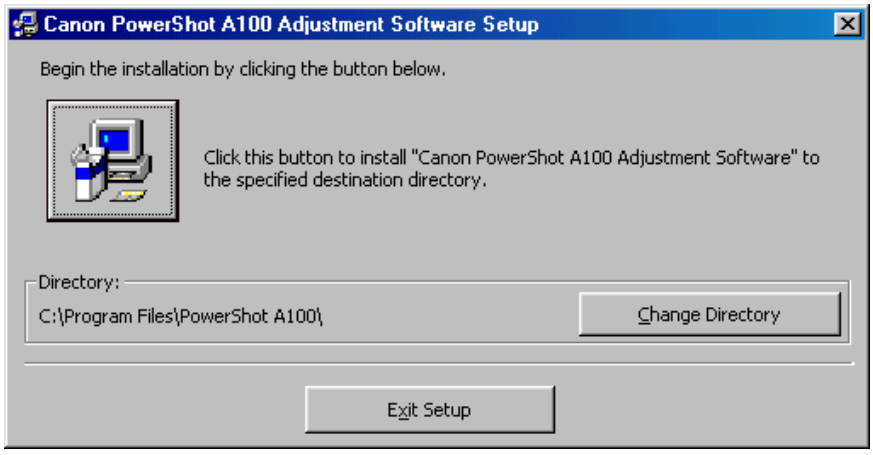
1. Double click the icon on the launcher screen or a file in the CD-ROM. (Model name of the camera that you are going to adjust and the name of the adjustment software are different.)

Camera Type	Icon	File Path
Power Shot A100	A100_ENG_Adj.	\Adjust\A100\Eng\Setup.exe
Power Shot A200	A200_ENG_Adj.	\Adjust\A200\Eng\Setup.exe
A30, A40, A100&A200	Font Set	\Adjust\Font Set\Setup.exe

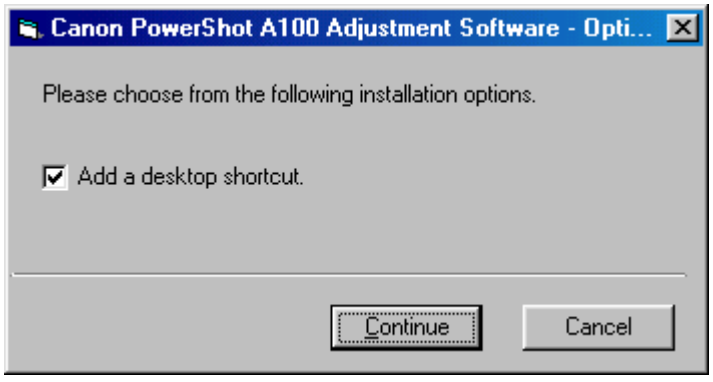
2. When the dialog box below appears, click the "OK" button.


Canon PowerShot A100 Adjustment Software Setup
Welcome to the Canon PowerShot A100 Adjustment Software installation program.
Setup cannot install system files or update shared files if they are in use. Before proceeding, we recommend that you close any applications you may be running.
OK
Exit Setup

3. When the dialog box below appears, click the button. (Software installation will then begin.)


Canon PowerShot A100 Adjustment Software Setup
Begin the installation by clicking the button below.
Click this button to install "Canon PowerShot A100 Adjustment Software" to the specified destination directory.
Directory:
C:\Program Files\PowerShot A100\
Change Directory
Exit Setup

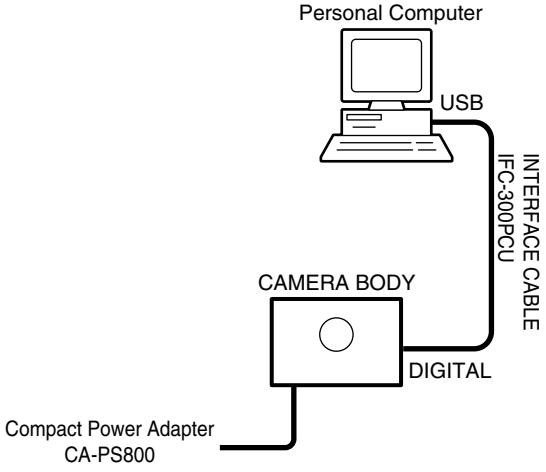
4. When the dialog box below appears, click the “Continue” button.
(In the case that you do not add a shortcut on desktop, remove clicking from the check box.)


Canon PowerShot A100 Adjustment Software - Opti...
Please choose from the following installation options.
Add a desktop shortcut.
Continue
Cancel

3.3.3 Preparation

Before starting up the Adjustment Software, follow the preparatory steps below:

1. Obtain all the tools necessary for the adjustment.
2. Connect the Camera to the Power Source with the Compact Power Adapter CA-PS800.
3. Set the Replay Mode on the camera and turn on.



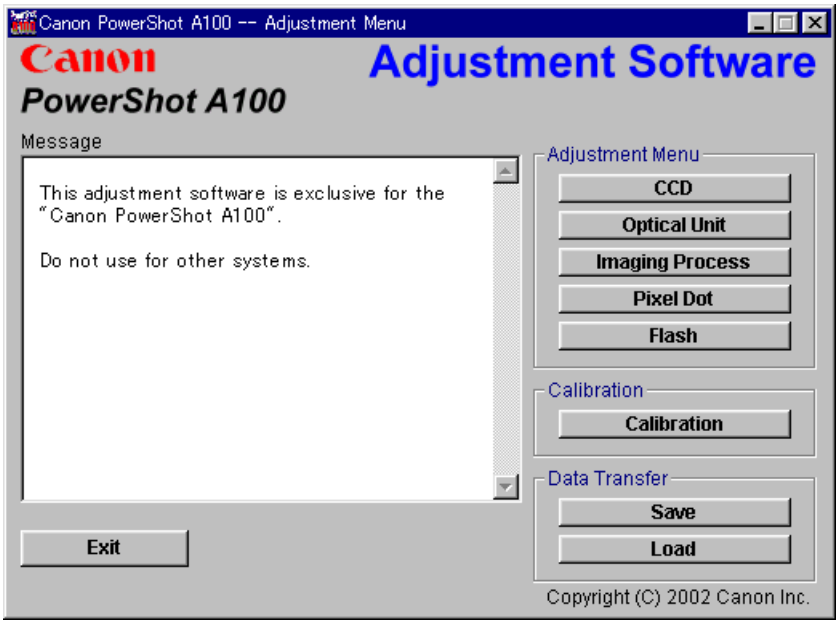
4. Connect the Camera's Digital terminal to the PC's USB Port with INTERFACE CABLE IFC-300 PCU.
5. Turn on the camera.
   Note: Perform the preparation in the following order otherwise the camera won't work properly.

3.3.4 Starting up the Adjustment Software

After completing the preparatory steps, click Start and move the cursor to Program; then select Canon Digital Camera and click PowerShot A100/A200 Adjustment.

3.3.5 Menu Window

When the Adjustment Software starts up, the Menu Window below will appear.



3.3.6 How to Use the Adjustment Software

Calibration/Adjustment

For starting, click the button related with adjustment.

* Whenever you use your light source for the adjustment for the first time, be sure to click the "Calibration" Button.

Quitting the Adjustment Software

Click the "Exit" button.

Saving or Loading data

- "Save" button : This button saves all adjustment data stored on the camera in text format.
- "Load" button : This button loads all adjustment data saved in text format to the camera.

Saving or Loading data

- "Save" button : This button saves all adjustment data stored on the camera in text format.
- "Load" button : This button loads all adjustment data saved in text format to the camera.

Notes

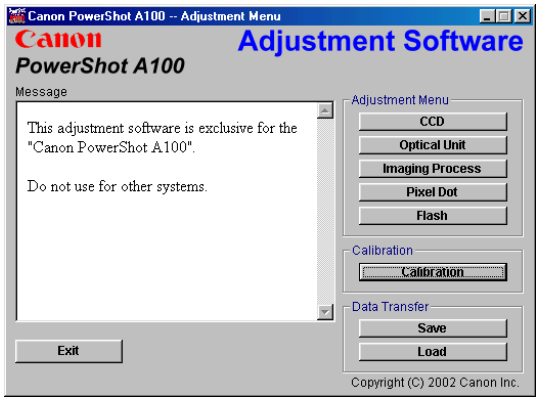
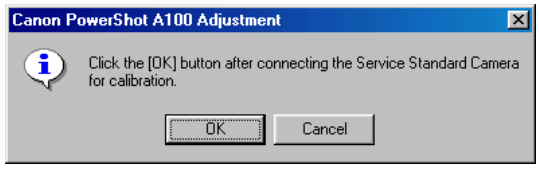
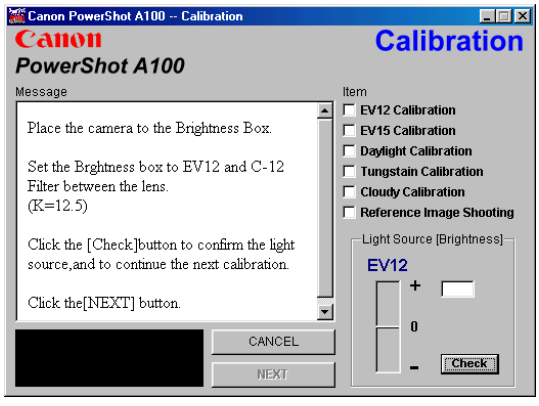
- If the adjustment fails, a message indicating the failure will appear on each product. If this happens, do the adjustment again.
- The Adjustment Software is dedicated only to Canon Digital Camera PowerShot A100/A200. Never use it for any other camera.
- The Windows98 must be pre-installed on the computer that is equipped with the USB terminal. (Windows95 does not support the USB.)
  * The operation with the Win2000, WinMe, etc. is not guaranteed.

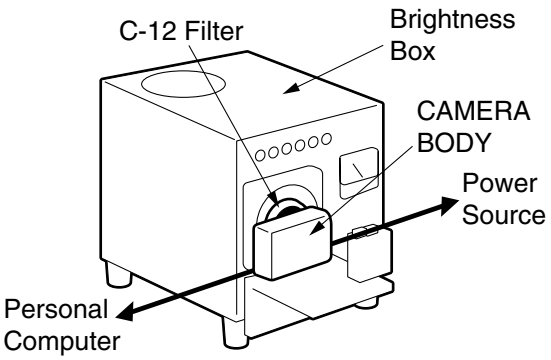
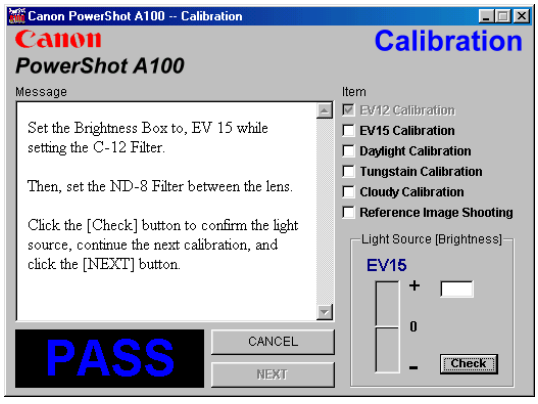
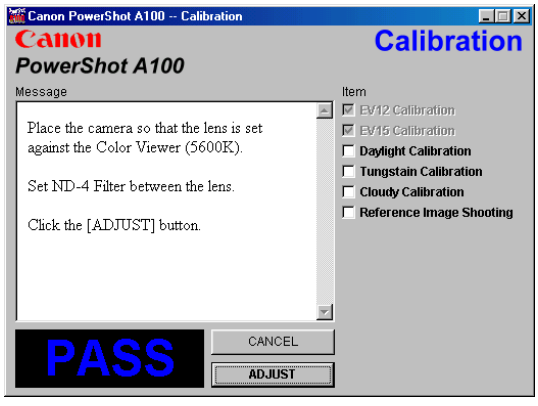
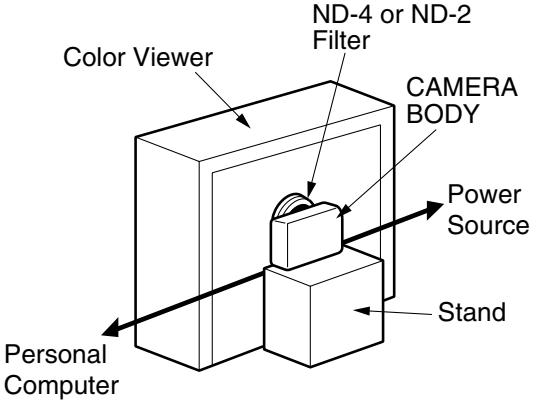
3.4 Calibration

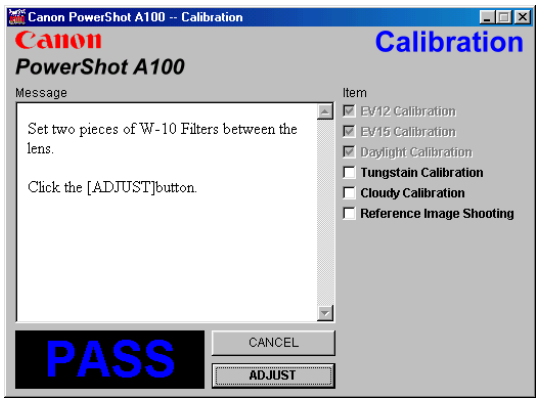
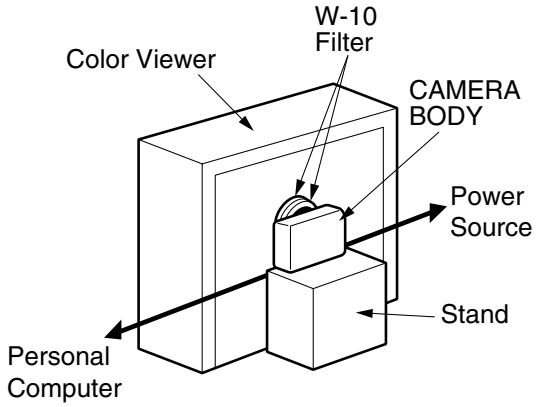
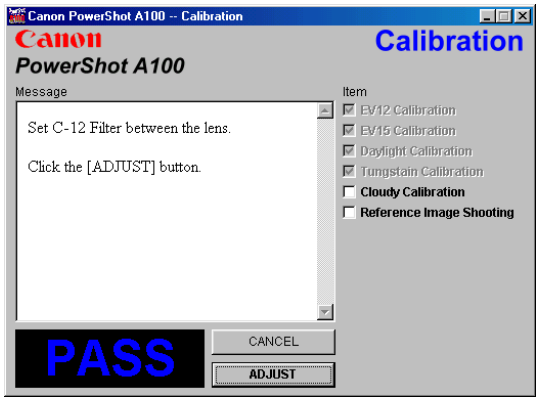
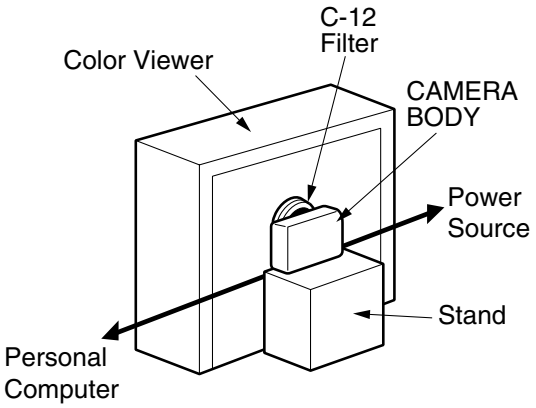
3.4.1 Calibration

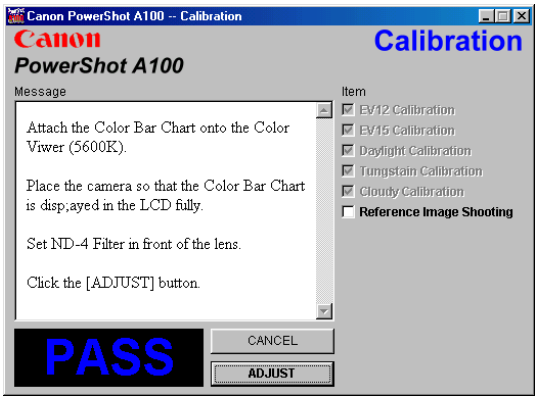
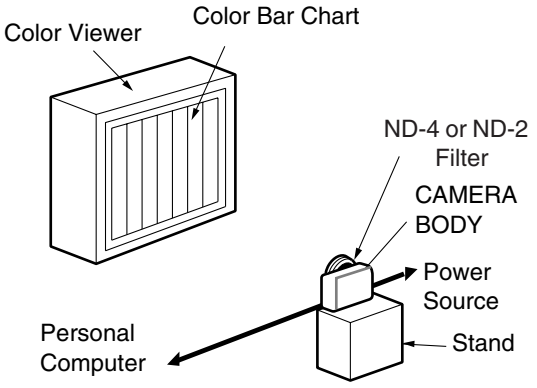
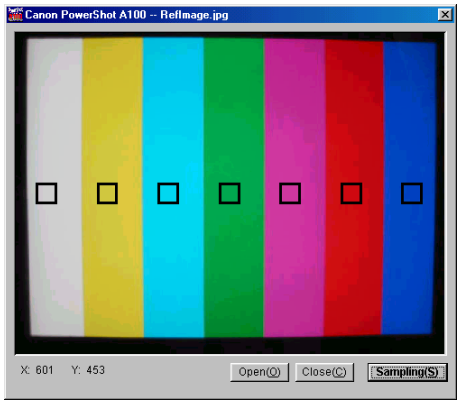
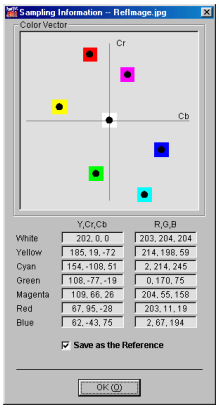
■ Tools Used

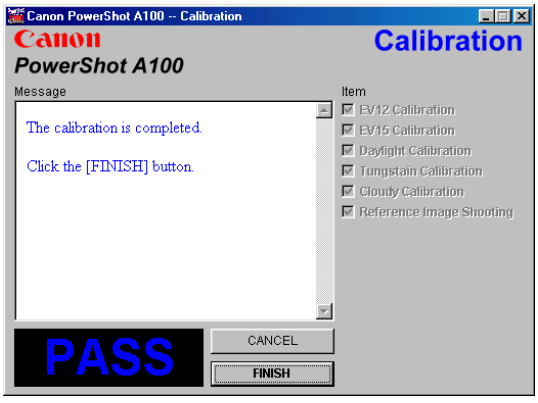
- Reference Camera (Merchandise)
- Compact Power Adapter CA-PS800
- Adjustment Software
- INTERFACE CABLE IFC-300PCU
- Personal Computer
- Color Viewer (5600° K)
- C-12 Filter
- ND-8 Filter
- ND-2 or ND-4 Filter
- W-10 Filter (2pcs.)

1	Click the “Calibration” button.	
2	1. When the message on the right appears, check that the reference camera (Merchandise) is connected to the computer. 2. Click the “OK” button.	
3	When the message on the right appears, go to 4.	

4	1. Place the camera so that lens is set against the light source surface of the Brightness Box via the C-12 Filter. 2. Set the Brightness Box to EV12. 3. Click the “Check” button. 4. Check the Brightness level if it is within 0 ± 5. * If not, calibrate the Brightness Box until it becomes within 0 ± 5. 5. Click the “NEXT” button.	
5	1. When the message on the right appears, Set the Brightness Box to EV15 and attach the ND-8 Filter while setting the C-12 Filter between the lens. 2. Click the “Check” button. 3. Check the Brightness level if it is within 0 ± 5. * If not, calibrate the Brightness Box until it becomes within 0 ± 5. 4. Click the “NEXT” button.	
6	When the message on the right appears go to 7.	
7	1. Attach the ND Filter* between the Lens and the Color Viewer. 2. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button. * PowerShot A100 : ND-4 PowerShot A200 : ND-2	

8	When the message on the right appears go to 9.	
9	1. Remove the ND Filter. 2. Attach the two W-10 Filters between the Lens and the Color Viewer. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button.	
10	When the message on the right appears go to 11.	
11	1. Remove the two W-10 Filters. 2. Attach the C-12 Filter between the Lens and the Color Viewer. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button.	

12	When the message on the right appears go to 13.	
13	1. Attach the Color Bar Chart to the Color Viewer. 2. Place the camera so that the Viewing image of the color bar chart is the full of LCD with the ND Filter* attached. 3. Click the “ADJUST” button. * PowerShot A100 : ND-4 PowerShot A200 : ND-2	
14	1. Shift a black frame on the displayed screen with a mouse to choose a color of color bar. 2. Click the “Sampling” button.	
15	Check “Save as Reference”, and click the “OK” button to store the data.	

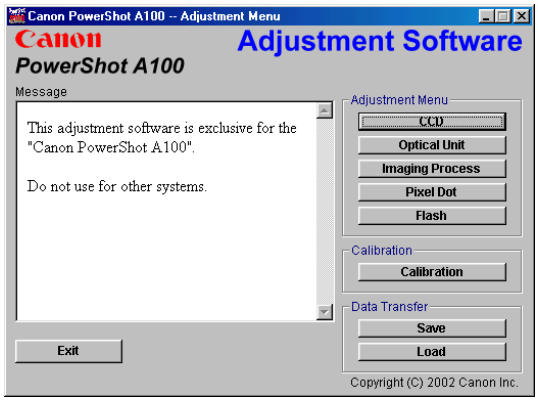
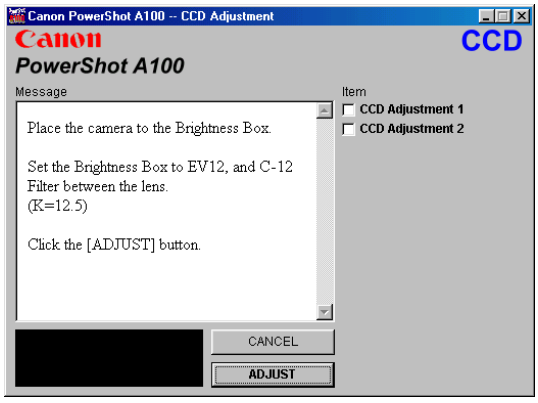
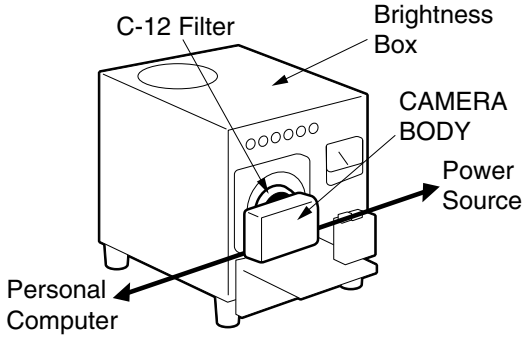
16	When the message on the right appears, click the “FINISH” button. (This ends the “Calibration”.)	

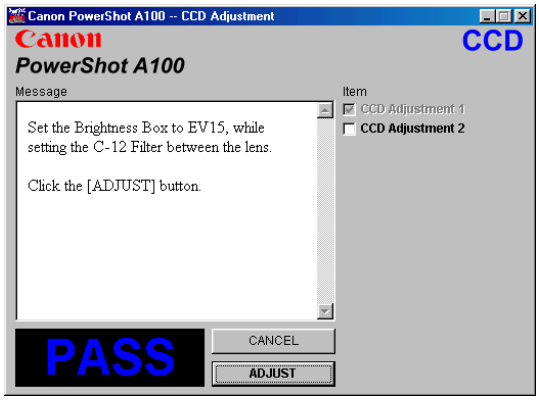
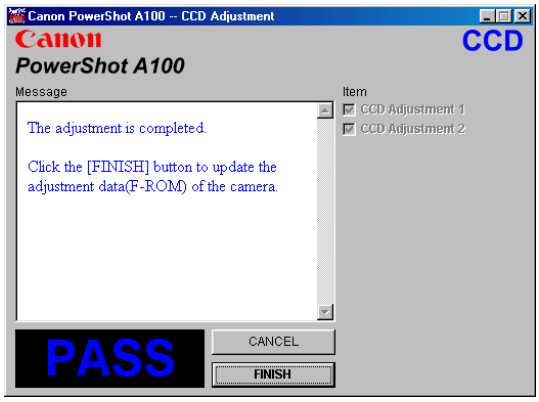
3.5 Adjustment Procedure

3.5.1 CCD Adjustment

■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- Brightness Box (light source A)
- Adjustment Software
- Compact Power Adapter CA-PS800
- C-12 Filter

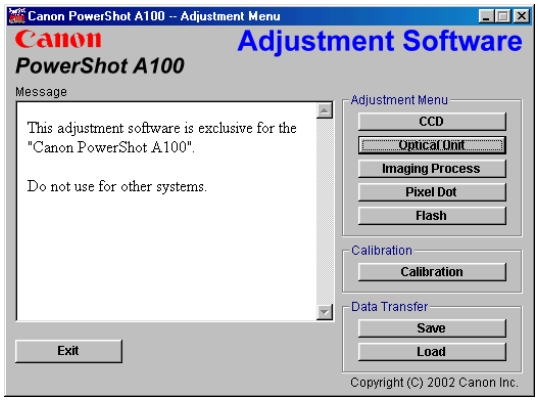
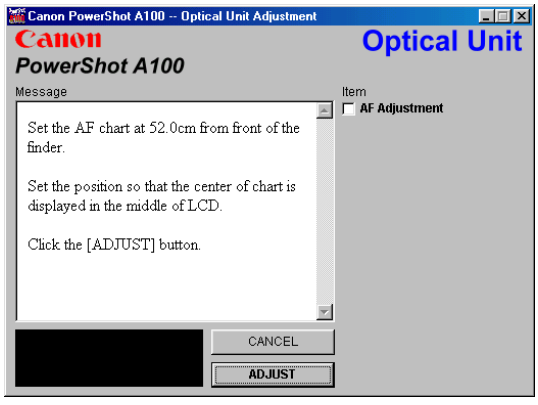
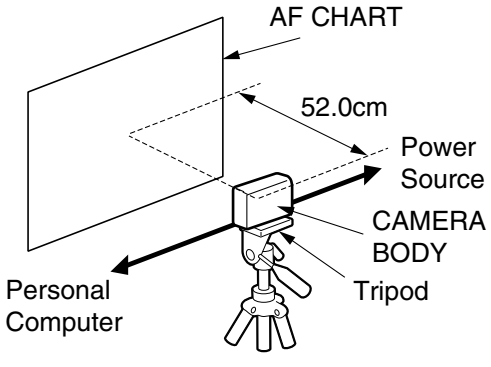
1	Click the “CCD” button.	
2	When the message on the right appears, go to 3.	
3	1. Place the camera so that lens is set against the light source surface of the Brightness Box via the C-12 Filter. 2. Set the Brightness Box to EV12. 3. Click the “ADJUST” button.	

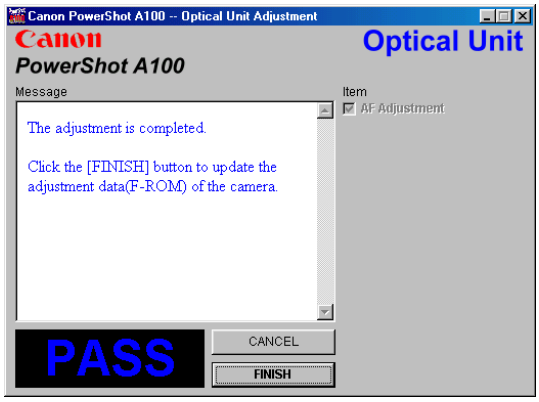
4	When the message on the right appears, Set the Brightness Box to EV15 while setting the C-12 Filter between the lens. Click the “ADJUST” button.	
5	When the message on the right appears, click the “FINISH” button. (This ends the “CCD” Adjustment.)	

3.5.2 Optical Unit Adjustment

■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- AF Chart
- Tripod
- Adjustment Software
- Compact Power Adapter CA-PS800

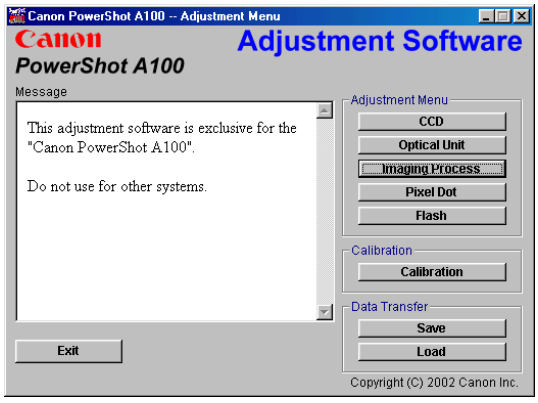
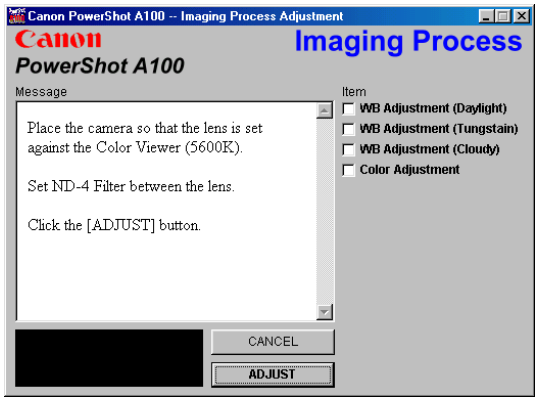
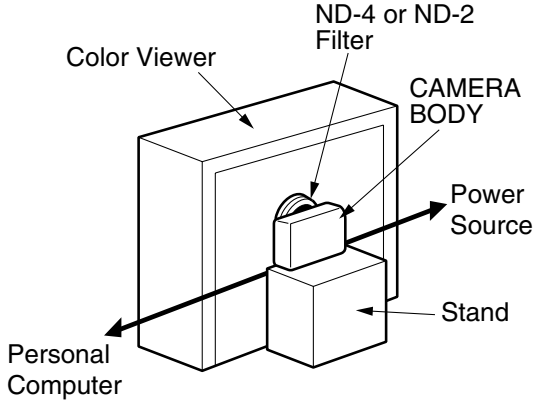
1	Click the “Optical Unit” button.	
2	When the message on the right appears, go to 3.	
3	1. Place the AF Chart at 52.0cm away from the front of the camera finder. * Place the Auto Focus Chart on a plain color wall or equivalent. * Adjust the light so that the brightness of the chart will be about EV8.5. 2. Adjust the position of the camera finely so that the center of the Auto Focus Chart is aligned with the center of the LCD. 3. Click the “ADJUST” button.	

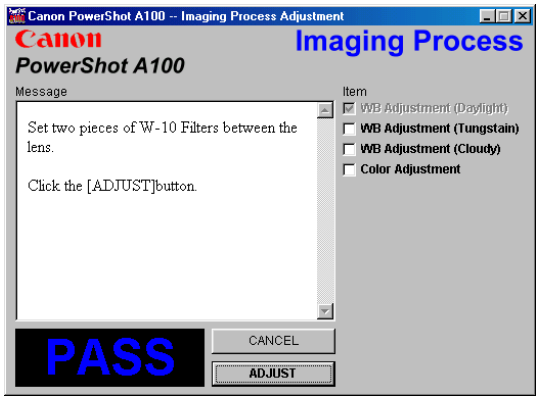
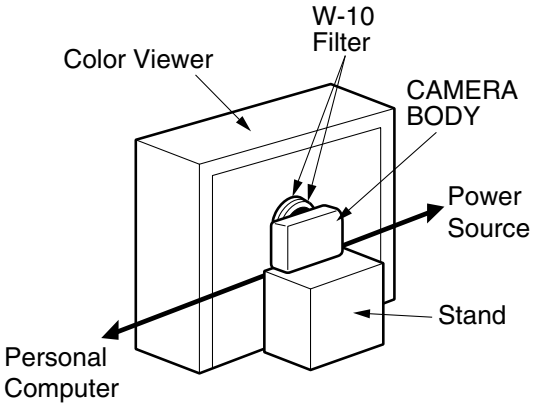
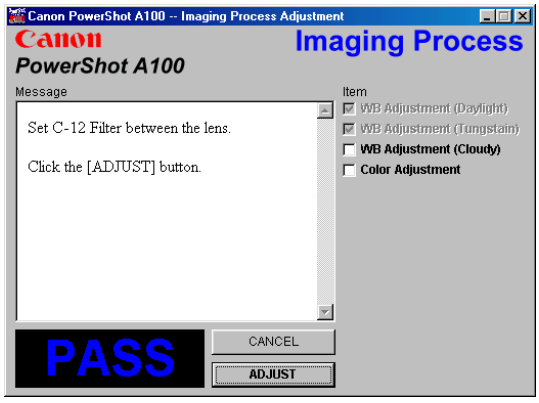
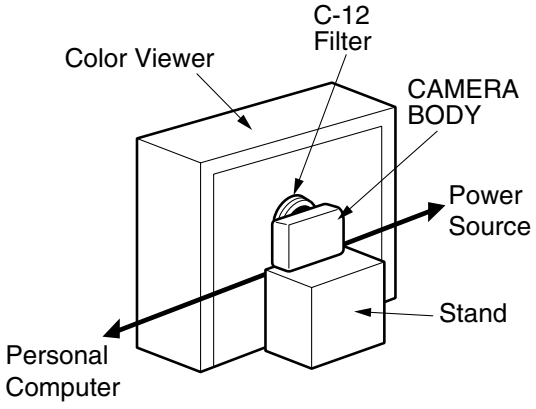
4	When the message on the right appears, click the "FINISH" button. (This ends the "Optical Unit" Adjustment.)	

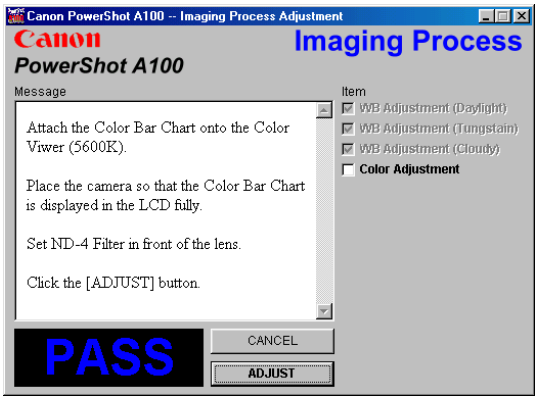
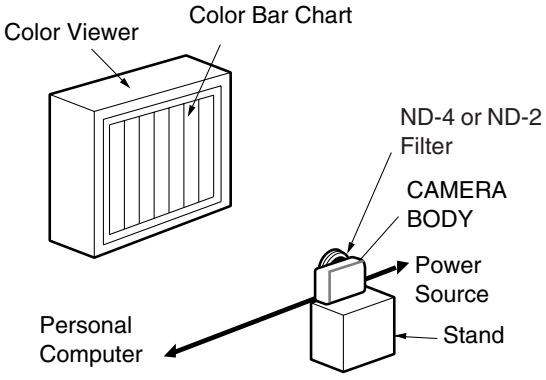
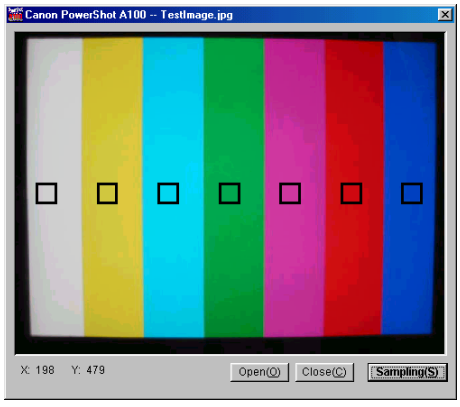
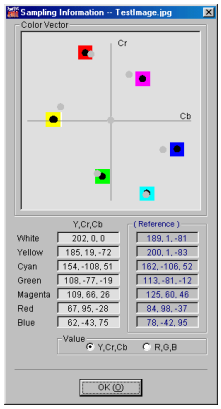
3.5.3 Imaging Process Adjustment

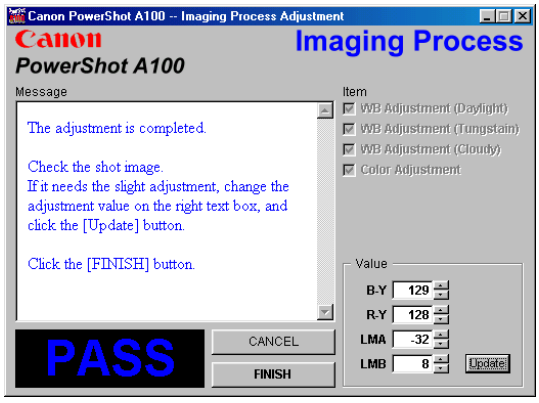
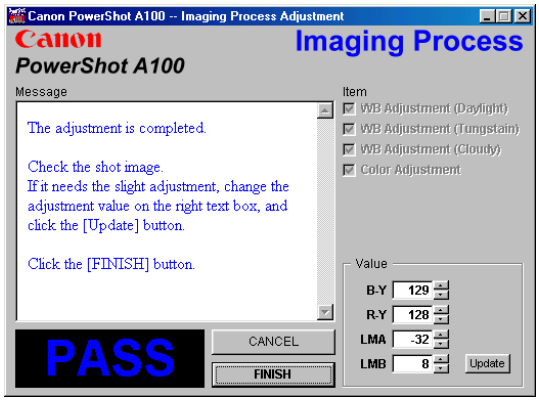
■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- Brightness Box (light source A)
- Compact Power Adapter CA-PS800
- Color Viewer (5600° K)
- Adjustment Software
- W-10 Filter (2 pcs.)
- Color Bar Chart
- ND-2 or ND-4 Filter
- C-12 Filter

1	Click the “Imaging Process” button.	
2	When the message on the right appears, go to 3.	
3	1. Attach the ND Filter* between the Lens and the Color Viewer. 2. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button. * PowerShot A100 : ND-4 PowerShot A200 : ND-2	

4	When the message on the right appears, go to 5.	
5	1. Remove the ND Filter. 2. Attach the two W-10 Filters. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button.	
6	When the message on the right appears, go to 7.	
7	1. Remove the two W-10 Filters. 2. Attach the C-12 Filter. Place the camera so that the lens is set against the center part of the Color Viewer. 3. Click the “ADJUST” button.	

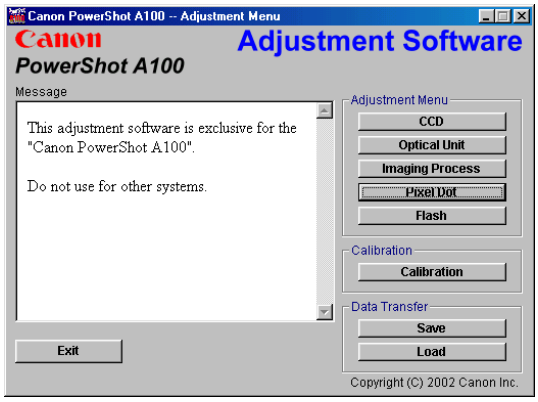
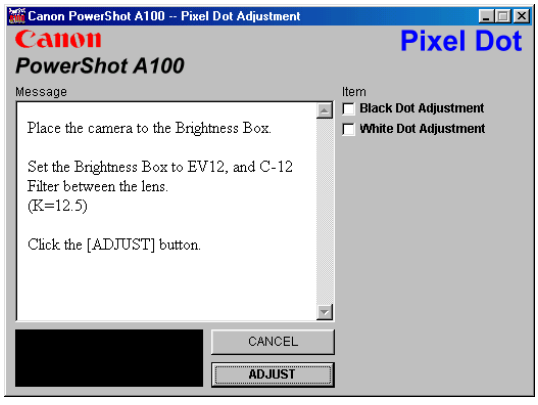
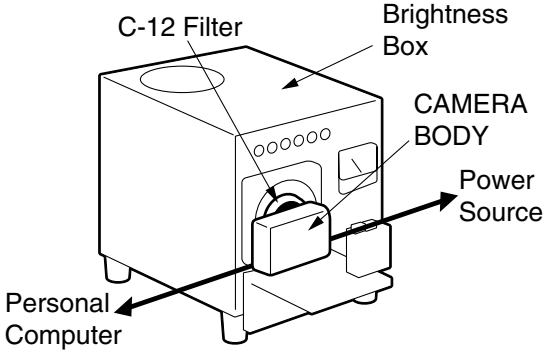
8	When the message on the right appears, go to 9.	
9	1. Attach the Color Bar Chart to the Color Viewer. 2. Place the camera so that the viewing image of the color bar chart is the full of LCD with the ND Filter* attached. 3. Click the “ADJUST” button. * PowerShot A100 : ND-4 PowerShot A200 : ND-2	
10	1. Shift a black frame on the displayed screen with a mouse to choose a color of color bar. 3. Click the “Sampling” button.	
11	Check “Yellow and Red”, and click the “OK” button. If these data are within specifications, go to 13. * Specification Ave_Cr = Reference Camera ± 10 Ave_Cb = Reference Camera ± 10	

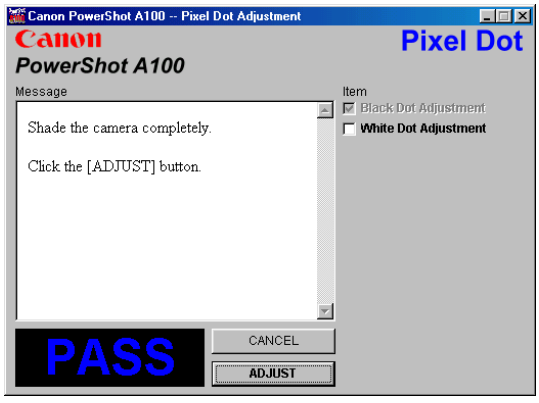
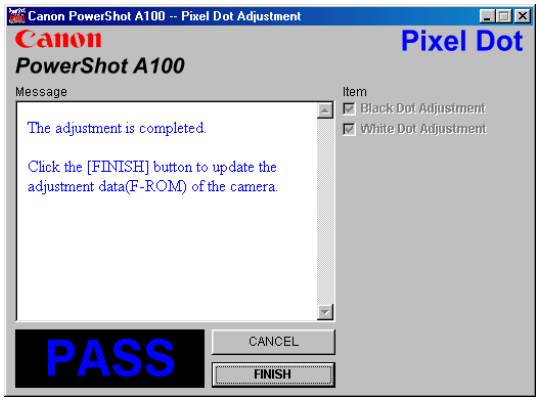
12	1. Confirm to see that the image on the PC monitor satisfies the specifications. 2. If the image on the PC monitor does not satisfy the specifications, change the data using UP, DOWN button or change the data directly by typing the data in the text box. Then click the "UPDATE" button.	
13	When the adjustment is completed, click the "FINISH" button. (This ends the "Imaging Process" Adjustment.)	

3.5.4 Pixel Dot Adjustment

■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- Brightness Box (light source A)
- Color Viewer (5600° K)
- Compact Power Adapter CA-PS800
- Adjustment Software
- C-12 Filter
- Light-Shielding Cloth (500 × 500 or larger)

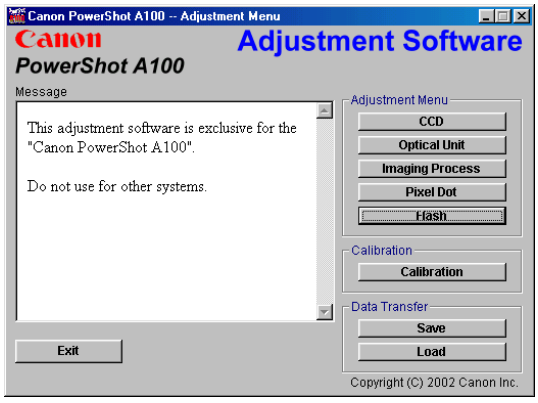
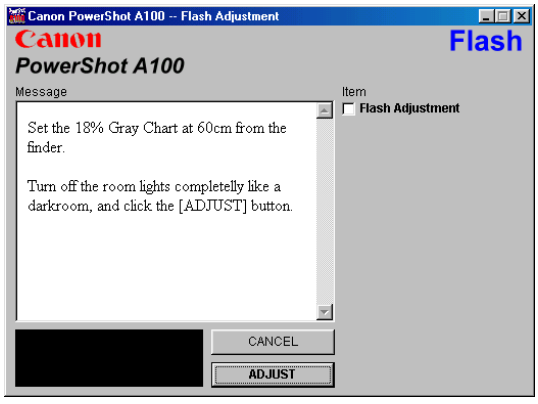
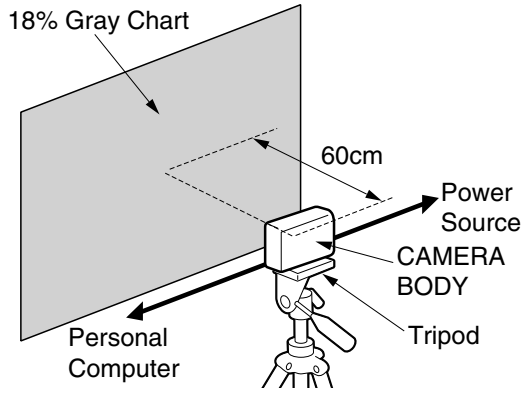
1	Click the “Pixel Dot” button.	
2	When the message on the right appears, go to 3.	
3	1. Place the camera so that lens is set against the light source surface of the Brightness Box via the C-12 Filter. 2. Set the Brightness Box to EV12. 3. Click the “ADJUST” button.	

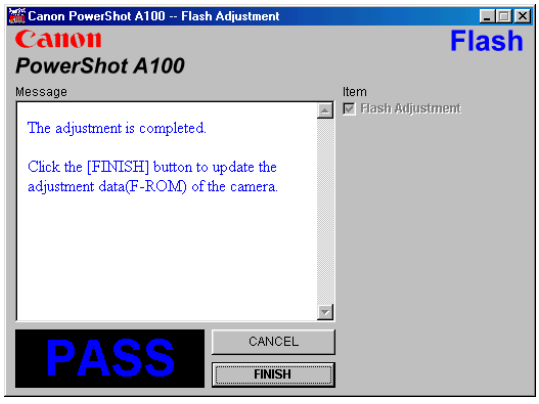
4	1. When the message on the right appears, cover the camera with the Light-Shielding Cloth so that the no light reasons the CCD. 2. Click the “ADJUST” button.	
5	When the message on the right appears, click the “FINISH” button. (This ends the “Pixel Dot” Adjustment.)	

3.5.5 Flash Adjustment

■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- Compact Power Adapter CA-PS800
- Adjustment Software
- 18% Gray Chart
- Tripod

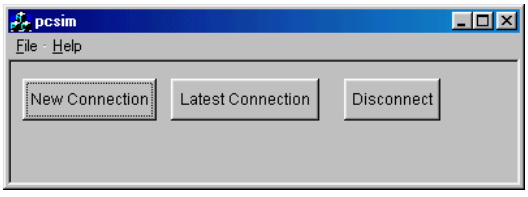
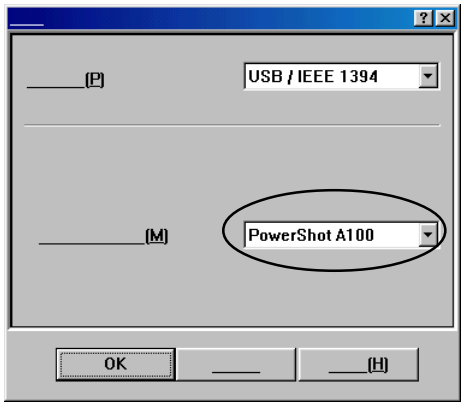
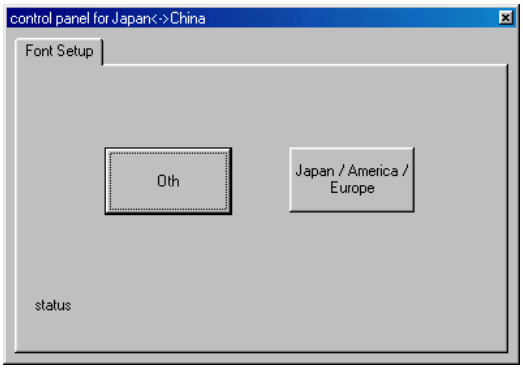
1	Click the “Flash” button.	
2	When the message on the right appears, go to 3.	
3	1. Set 18% Gray Chart 60cm from the Finder front. 2. Make the room as dark as a darkroom. 3. Click the “ADJUST” button.	

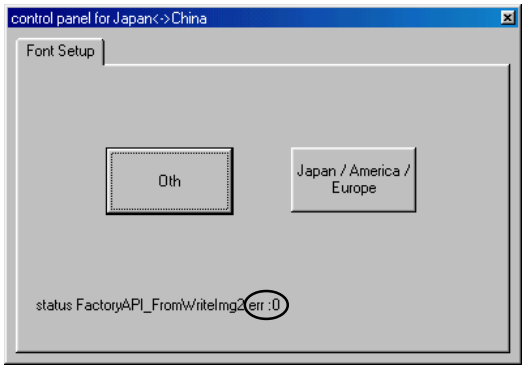
4	When the message on the right appears, click the "FINISH" button. (This ends the "Flash" Adjustment.)	

3.5.6 Language (For Oth)

■ Tools Used

- Personal Computer
- INTERFACE CABLE IFC-300PCU
- Compact Power Adapter CA-PS800
- Adjustment Software (FontSet.exe)

1	Open the “FontSet.exe” and click the “New Connection” button.	
2	When the message on the right appears, confirm the model name, and click the “OK” button.	
3	When the message on the right appears, click the “Oth” button.	

4	*Make sure to appear “err:0 on the bottom line.	

CHAPTER 4. PARTS CATALOG

CONTENTS

PowerShot A200/PowerShot A100
Casing Parts ---------- Pg1
Internal Parts ---------- Pg2

Accessories-1 ---------- Pg3

Accessories-2 ---------- Pg4

Accessories-3 ---------- Pg5

Service Tools ---------- Pg6

CLASS凡例

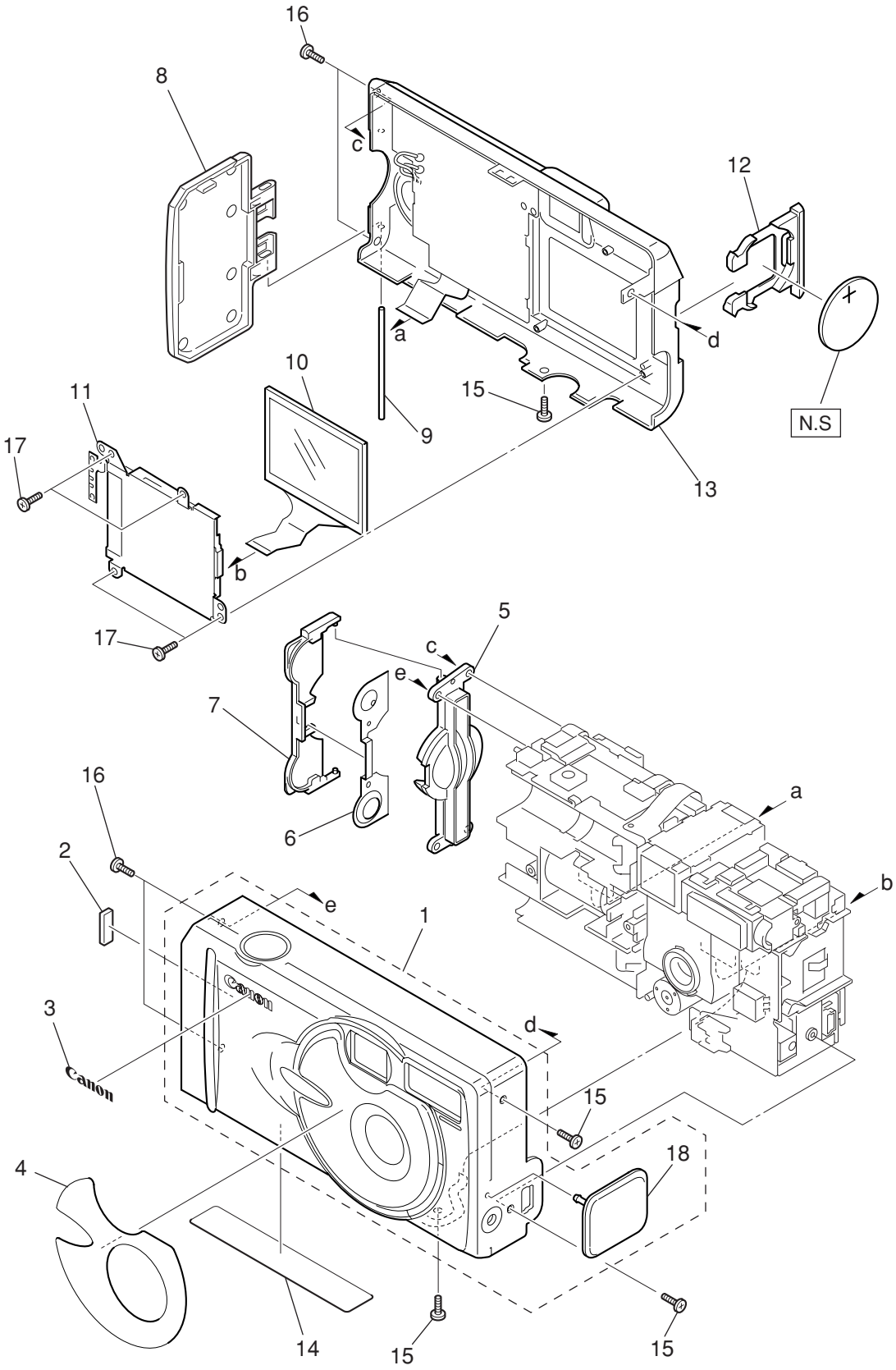
A: 使用頻度　高
B: 使用頻度　中
C: 使用頻度　低
D: 安全規格部品
E: 消耗部品
F: 標準ネジ、ワッシャー
S: 供給制限品

Category of CLASS

A: Frequency of use: High
B: Frequency of use: Middle
C: Frequency of use: Low
D: Safety-related critical parts
E: Consumable parts
F: Standard screws and washers
S: Supply of the parts is limited

Casing Parts

Pg1

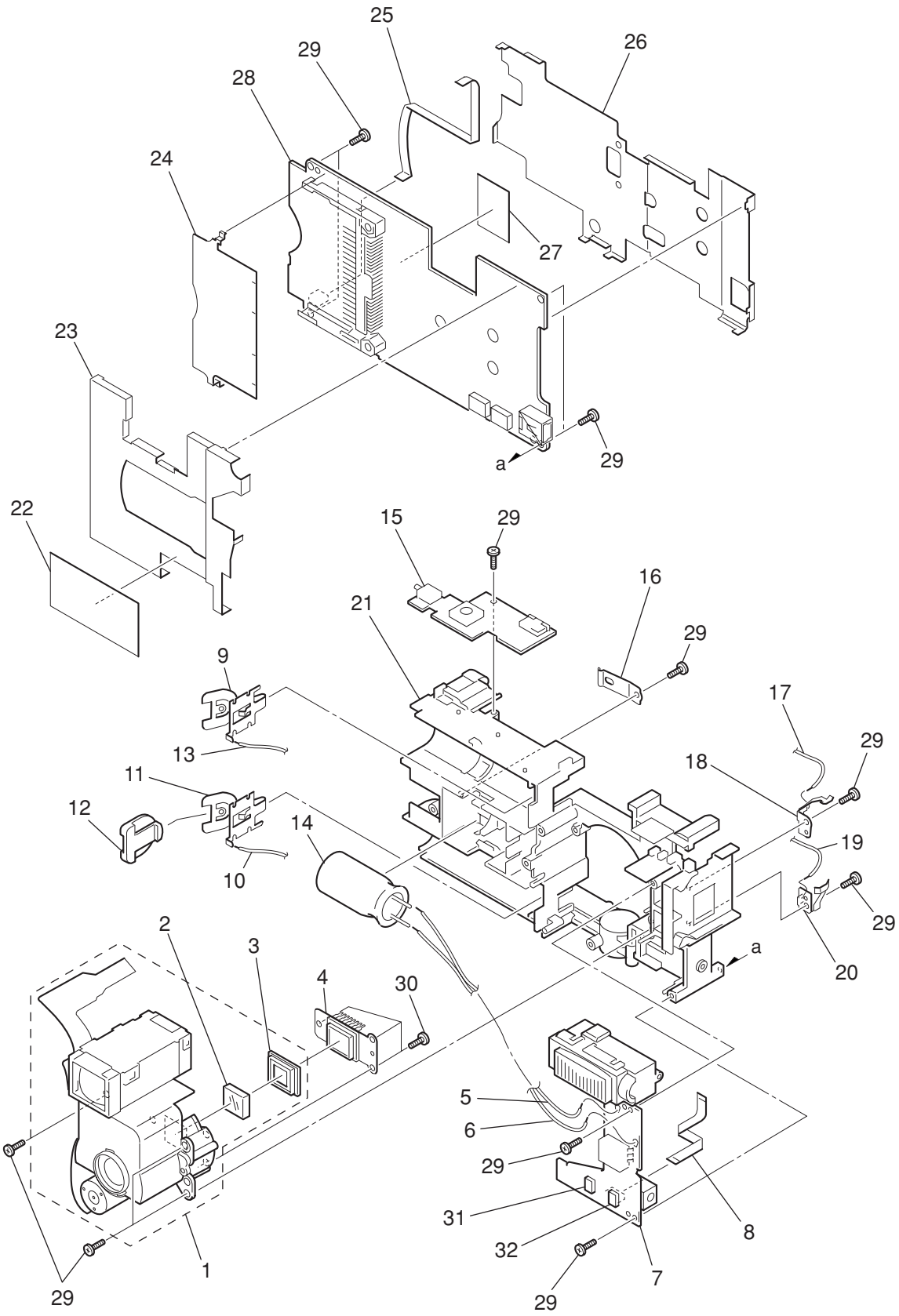


PARTS LIST

SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	CM1-1307-000	B	1	FRONT COVER UNIT	A100
	CM1-1440-000	B	1	FRONT COVER UNIT	A200
2	CD1-4159-000	B	1	CUSHION, BATTERY COVER	
3	CB1-8303-000	B	1	PLATE, LOGO	
4	CD1-4324-000	B	1	PANEL, BARRIER	
5	CD1-4126-000	B	1	COVER, CF	
6	CD1-4121-000	C	1	PLATE, BATTERY CONTACT	
7	CD1-4124-000	B	1	COVER, BATTERY	
8	CD1-4127-000	B	1	COVER, SIDE	
9	CD1-4128-000	C	1	BAR, BATTERY COVER	
10	CK5-0051-000	C	1	PANEL, LCD	
	CK5-0051-001	C	1	PANEL, LCD (SELECTION)	
11	CM1-1310-000	C	1	BACK LIGHT UNIT	
12	CD1-4138-000	B	1	HOLDER, LITHIUM BATTERY	
13	CM1-1308-000	B	1	REAR COVER UNIT	
14	CY1-6158-000	B	1	PLATE, BODY NUMBER (J)	A100
	CY1-6159-000	B	1	PLATE, BODY NUMBER (N)	A100
	CY1-6160-000	B	1	PLATE, BODY NUMBER (E)	A100
	CY1-6161-000	B	1	PLATE, BODY NUMBER (O)	A100
	CY1-6181-000	B	1	PLATE, BODY NUMBER (J)	A200
	CY1-6182-000	B	1	PLATE, BODY NUMBER (N)	A200
	CY1-6183-000	B	1	PLATE, BODY NUMBER (E)	A200
	CY1-6184-000	B	1	PLATE, BODY NUMBER (O)	A200
15	CD1-4157-000	F	4	SCREW	
16	XA4-9170-557	F	4	SCREW	
17	XA4-9170-407	F	4	SCREW	
18	CD1-4118-000	B	1	COVER, CONNECTOR	

Pg2

Internal Parts



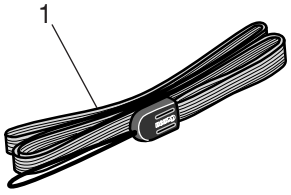
PARTS LIST

SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	CY1-6156-000	B	1	OPTICAL UNIT	
2	YN1-1936-000	C	1	FILTER, IR	A100
	YN1-1937-000	C	1	FILTER, IR	A200
3	CD1-4087-000	C	1	RUBBER, CCD	
4	CY1-6157-000	C	1	CCD UNIT	A100
	CY1-6180-000	C	1	CCD UNIT	A200
5	CK2-1269-000	C	1	LEAD, MICROPHONE (-)	
6	CK2-1268-000	C	1	LEAD, MICROPHONE (+)	
7	CM1-1305-000	C	1	FLASH UNIT	
8	CK2-1270-000	C	1	FPC, M-S	
9	CD1-4120-000	C	1	CONTACT, BATTERY (-)	
10	CK2-1271-000	C	1	LEAD, BATTERY (+)	
11	CD1-4119-000	C	1	CONTACT, BATTERY (+)	
12	CD1-4122-000	C	1	GUARD, BATTERY (+)	
13	CK2-1272-000	C	1	LEAD, BATTERY (-)	
14	CK9-0402-000	C	1	CAPASITOR, ELECT., 80µ/330V	
15	CM1-1302-000	C	1	PCB ASS'Y, RLS	
16	CD1-4125-000	C	1	PLATE, BATTERY LOCK	
17	CK2-1290-000	C	1	LEAD, LITHIUM (+)	
18	CD1-4139-000	C	1	CONTACT, LITHIUM (+)	
19	CK2-1291-000	C	1	LEAD, LITHIUM (-)	
20	CD1-4140-000	C	1	CONTACT, LITHIUM (-)	
21	CD1-4113-000	C	1	FRAME, MAIN	
22	CD1-4418-000	C	1	SHEET, EM 1	
23	CD1-4141-000	C	1	CASE, MAIN SHIELD 1	
24	CD1-4143-000	C	1	CASE, MAIN SHIELD 3	
25	CK2-1257-000	C	1	FPC, M-R	
26	CD1-4142-000	C	1	CASE, MAIN SHIELD 2	
27	CD1-4419-000	C	1	SHEET, EM 2	
28	CM1-1301-000	C	1	PCB ASS'Y, MAIN	A100
	CM1-1439-000	C	1	PCB ASS'Y, MAIN	A200
29	XA4-9170-407	F	13	SCREW	
30	XA4-9140-307	F	3	SCREW	
31	CK9-0416-000	C	1	FUSE, SKK UMF 2012	
32	CK9-0415-000	C	1	FUSE, SKK I14	

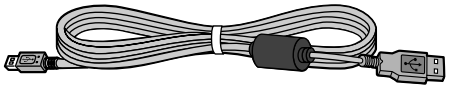
Pg3

Accessories-1

Wrist Strap WS-200

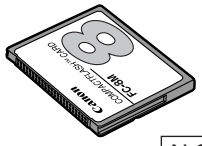


USB Interface Cable IFC-300PCU



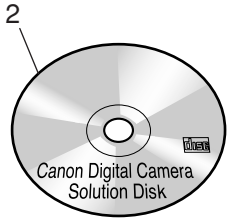
N.S

CF Card FC-8M

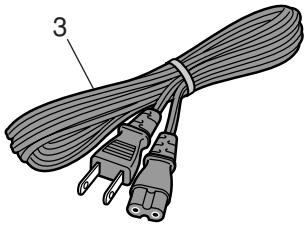


N.S

Canon Digital Camera Solution Disk



AC Cable



Alkaline Batteries (X2)

N.S

N.S : N.S Stand for No Stock (Product available)

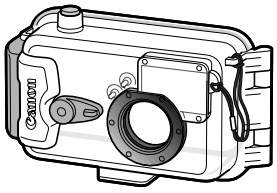
PARTS LIST

SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	C84-1060-000	B	1	WRIST STRAP WS-200	
2	C84-1115-000	S	1	CD-ROM, SOLUTION DISK VER.9.0 (J/E) PS A100	FOR JAPAN, ASIA, AUSTRALIA
	C84-1116-000	S	1	CD-ROM, SOLUTION DISK VER.9.0 (E/F/S) PS A100	FOR USA, CANADA
	C84-1117-000	S	1	CD-ROM, SOLUTION DISK VER.10.0 (J/E) PS A200	FOR JAPAN, ASIA, AUSTRALIA
	C84-1118-000	S	1	CD-ROM, SOLUTION DISK VER.10.0 (E/F/S) PS A200	FOR USA, CANADA
3	WT3-5062-000	C	1	AC CABLE (J)	FOR JAPAN
	WT3-5063-000	C	1	AC CABLE (N)	FOR USA, CANADA
	WT3-5064-000	C	1	AC CABLE (E)	FOR EUROPE, ASIA
	WT3-5115-000	C	1	AC CABLE (B)	FOR USA
	WT3-5066-000	C	1	AC CABLE (A)	FOR AUSTRALIA

Pg4

Accessories-2

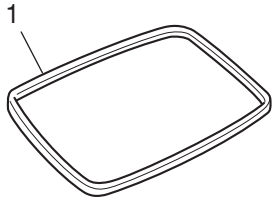
Water proof Case WP-DC400



N.S

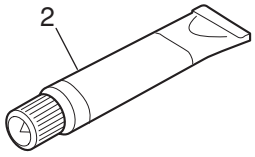
Water proof Seal

1



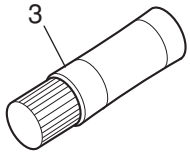
Grease Packing

2



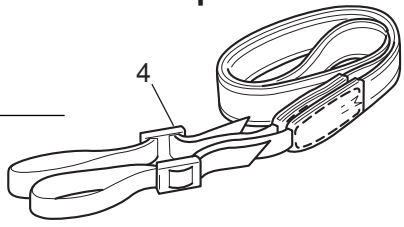
Protector Moisture

3



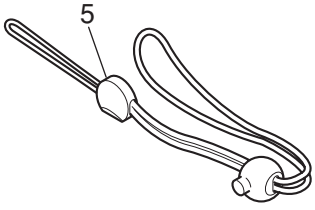
Neck Strap

4



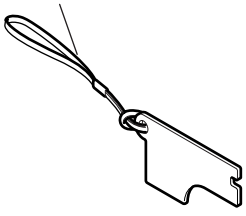
Wrist Strap

5



Diffusion Plate Unit

6



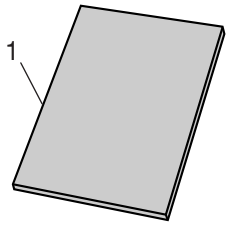
N.S : N.S Stand for No Stock (Product available)

PARTS LIST

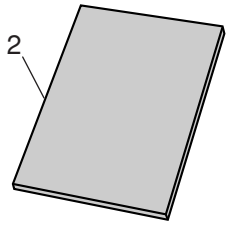
SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	CY1-6175-000	B	1	PACKING, RUBBER, WP-DC400	
2	DY9-3029-000	C	1	GREASE, PACKING	
3	DY9-3028-000	C	1	PROTECTOR, MOISTURE	
4	CY1-6099-000	B	1	NECK STRAP	
5	CY1-6174-000	B	1	WRIST STRAP	
6	CY1-6176-000	B	1	DIFFUSION PLATE UNIT	

Accessories-3

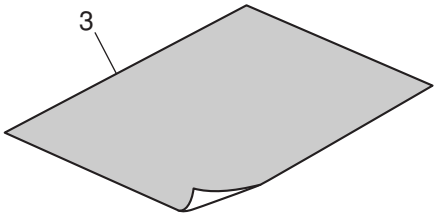
Camera User Guide



Software Starter Guide



System Map

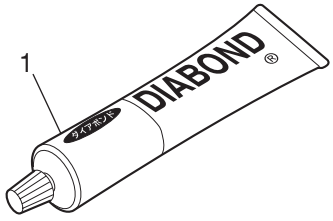


PARTS LIST

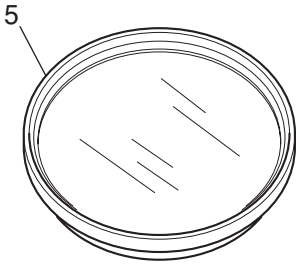
SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	CDI-J036-000	S	1	I.BOOK (J) PS A100	FOR JAPAN
	CDI-E037-000	S	1	I.BOOK (E) PS A100	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F027-000	S	1	I.BOOK (F) PS A100	FOR CANADA
	CDI-S034-000	S	1	I.BOOK (S) PS A100	FOR USA
	CDI-J038-000	S	1	I.BOOK (J) PS A200	FOR JAPAN
	CDI-E039-000	S	1	I.BOOK (E) PS A200	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F029-000	S	1	I.BOOK (F) PS A200	FOR CANADA
	CDI-S036-000	S	1	I.BOOK (S) PS A200	FOR USA
2	CDI-J035-000	S	1	SOFTWARE GUIDE (J) PS A100	FOR JAPAN
	CDI-E045-000	S	1	SOFTWARE GUIDE (E) PS A100	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F035-000	S	1	SOFTWARE GUIDE (F) PS A100	FOR CANADA
	CDI-S032-000	S	1	SOFTWARE GUIDE (S) PS A100	FOR USA
	CDI-J042-000	S	1	SOFTWARE GUIDE (J) PS A200	FOR JAPAN
	CDI-E046-000	S	1	SOFTWARE GUIDE (E) PS A200	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F036-000	S	1	SOFTWARE GUIDE (F) PS A200	FOR CANADA
	CDI-S033-000	S	1	SOFTWARE GUIDE (S) PS A200	FOR USA
3	CDI-J037-000	S	1	SYSTEM MAP (J) PS A100	FOR JAPAN
	CDI-E038-000	S	1	SYSTEM MAP (E) PS A100	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F028-000	S	1	SYSTEM MAP (F) PS A100	FOR CANADA
	CDI-S035-000	S	1	SYSTEM MAP (S) PS A100	FOR USA
	CDI-J039-000	S	1	SYSTEM MAP (J) PS A200	FOR JAPAN
	CDI-E040-000	S	1	SYSTEM MAP (E) PS A200	FOR USA, CANADA, ASIA, AUSTRALIA
	CDI-F030-000	S	1	SYSTEM MAP (F) PS A200	FOR CANADA
	CDI-S037-000	S	1	SYSTEM MAP (S) PS A200	FOR USA

Service Tools

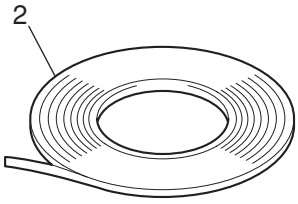
DIA BOND NO.1663G BLACK



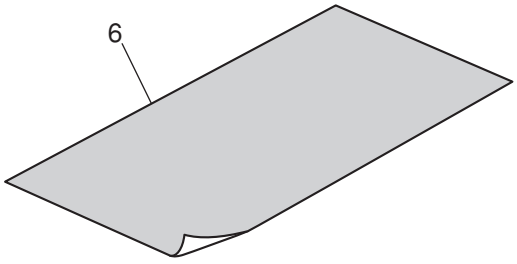
W-10 Filter



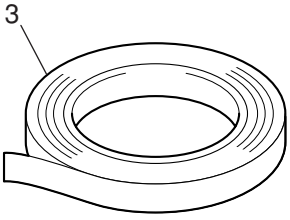
Adhesive Tape SONY T4000



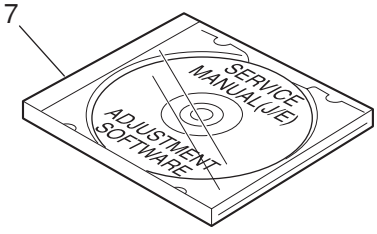
18% Gray Chart



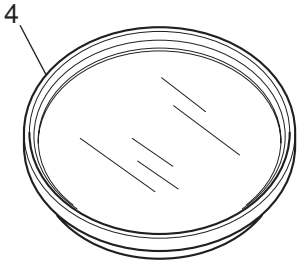
Adhesive Tape 3M NO.56



SERVICE MANUAL CD-ROM



C-12 Filter



PARTS LIST

SYMBOL	PARTS NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	CY9-8129-000	Y	1	BOND, DIA BOND NO.1663G BLACK	
2	CY9-6012-000	Y	1	ADHESIVE TAPE, SONY T4000	6mm X 50m roll
3	CY4-6018-000	Y	1	ADHESIVE TAPE, 3M NO.56	15mm X 66m roll
4	DY9-2029-000	Y	1	FILTER, C-12	
5	CY9-1543-000	Y	1	FILTER, W-10	
6	CY4-6016-000	Y	1	CHART, 18% GRAY	
7	CY8-4377-031	Y	1	CD-ROM, SERVICE MANUAL (J/E)	

CHAPTER 5. DIAGRAMS

CONTENTS

1. INTERCONNECTION DIAGRAM
2. BLOCK DIAGRAMS
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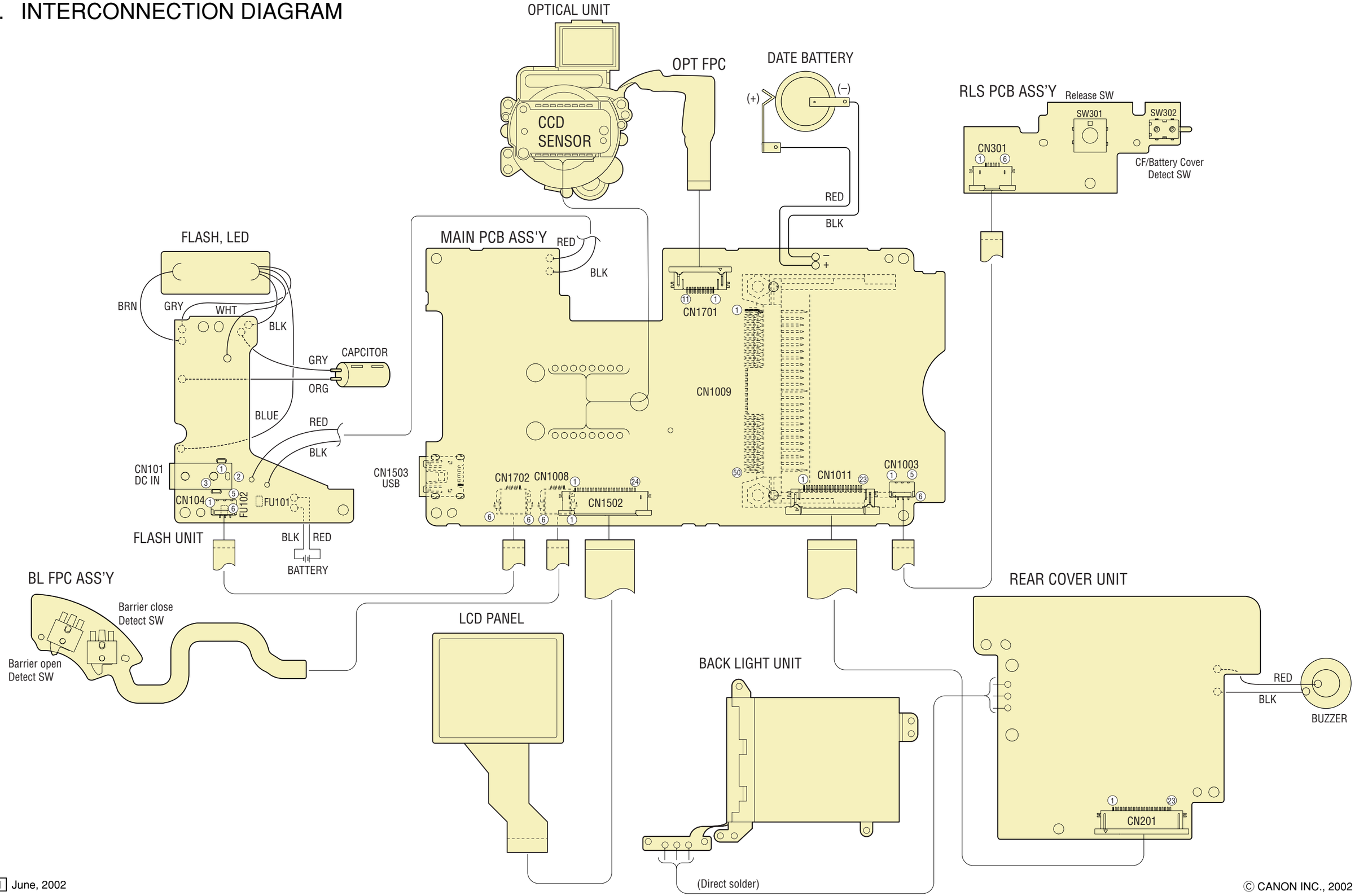
   - 2-2. MAIN PCB ASS'Y (1/4)
   - 2-3. MAIN PCB ASS'Y (2/4)
   - 2-4. MAIN PCB ASS'Y (3/4)
   - 2-5. MAIN PCB ASS'Y (4/4)
   - 2-6. Abbreviation in Block Diagrams
3. P.C.B. DIAGRAMS
   - 3-1. MAIN PCB ASS'Y
   - 3-2. FLASH UNIT
   - 3-3. OPR PCB ASS'Y
   - 3-4. RLS PCB ASS'Y
   - 3-5. BL FPC ASS'Y

1. INTERCONNECTION DIAGRAM



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CONNECTORS

MAIN PCB ASS'Y

CN1003	
1	M_GND
2	VBAT_TMP
3	CFQP
4	SW2
5	SW1
6	SCAN

CN1008	
1	M_GND
2	BRCL
3	SCAN
4	BROP
5	VBATT_R
6	M_GND

CN1009	
1	GND
2	D03
3	D04
4	D05
5	D06
6	D07
7	/CE1
8	A10
9	/CE1
10	A09
11	A08
12	A07
13	VCC
14	A06
15	A05
16	A04
17	A03
18	A02
19	A01
20	A00
21	D00
22	D01
23	D02
24	/IOIS15
25	/CD2
26	/CD1
27	D11
28	D12
29	D13
30	D14
31	D15
32	/CE2
33	/VS1
34	/IORD
35	/IOWR
36	/WE
37	IREQ
38	VCC
39	Not Connected
40	/VS2
41	RESET
42	/WAIT
43	Not Connected
44	/REG
45	Not Connected
46	Not Connected
47	D08
48	D09
49	D110
50	GND

CN1011	
1	VCC3
2	LED_BL
3	VCC1
4	LED_MACRO
5	LED_GREEN
6	LED_ORANGE
7	M_GND
8	M_GND
9	SCAN
10	ERASE
11	MENU
12	DSIP
13	LEFT
14	DOWN
15	SET
16	RIGHT
17	UP
18	WIDE
19	TELE
20	PLAY
21	VBATT
22	BUZZER
23	C_GND

CN1502	
1	TESTL
2	COM
3	VST
4	VCK
5	EN
6	DWN
7	VDD
8	VSS
9	VDDG
10	VSSG
11	Not Connected
12	WIDE
13	HST
14	REF
15	Not Connected
16	CEXT/REXT
17	HCK2
18	HCK1
19	PSIG
20	GREEN
21	RED
22	BLUE
23	RGT
24	Not Connected

CN1503	
1	VBUS
2	D-
3	D+
4	Not Connected
5	UV_GND

CN1701	
1	AFA+
2	AFB-
3	AFA-
4	AFB+
5	AFRST_COM
6	AFRST_CO
7	AFRST_AN
8	IR+
9	IR-
10	SH+
11	SH-

CN1702	
1	GND
2	EFCHG
3	GND
4	STSP
5	VCHGVL
6	LED_SELF

REAR COVER UNIT

CN201	
1	VCC3
2	LED_BL
3	VCC1
4	LED_MACRO
5	LED_GREEN
6	LED_ORANGE
7	M_GND
8	M_GND
9	SCAN
10	ERASE
11	MENU
12	DISP
13	LEFT
14	DOWN
15	SET
16	RIGHT
17	UP
18	WIDE
19	TELE
20	PLAY
21	VBATT
22	BUZZER
23	C_GND

FLASH UNIT

CN101	
1	BATT+
2	SW
3	GND

CN104	
1	GND
2	EFCHG
3	GND
4	STSP
5	VCHGVL
6	LED_SELF

RLS PCB UNIT

CN301	
1	M_GND
2	VBATT_TEMP
3	CFOP
4	SW2
5	SW1
6	SCAN

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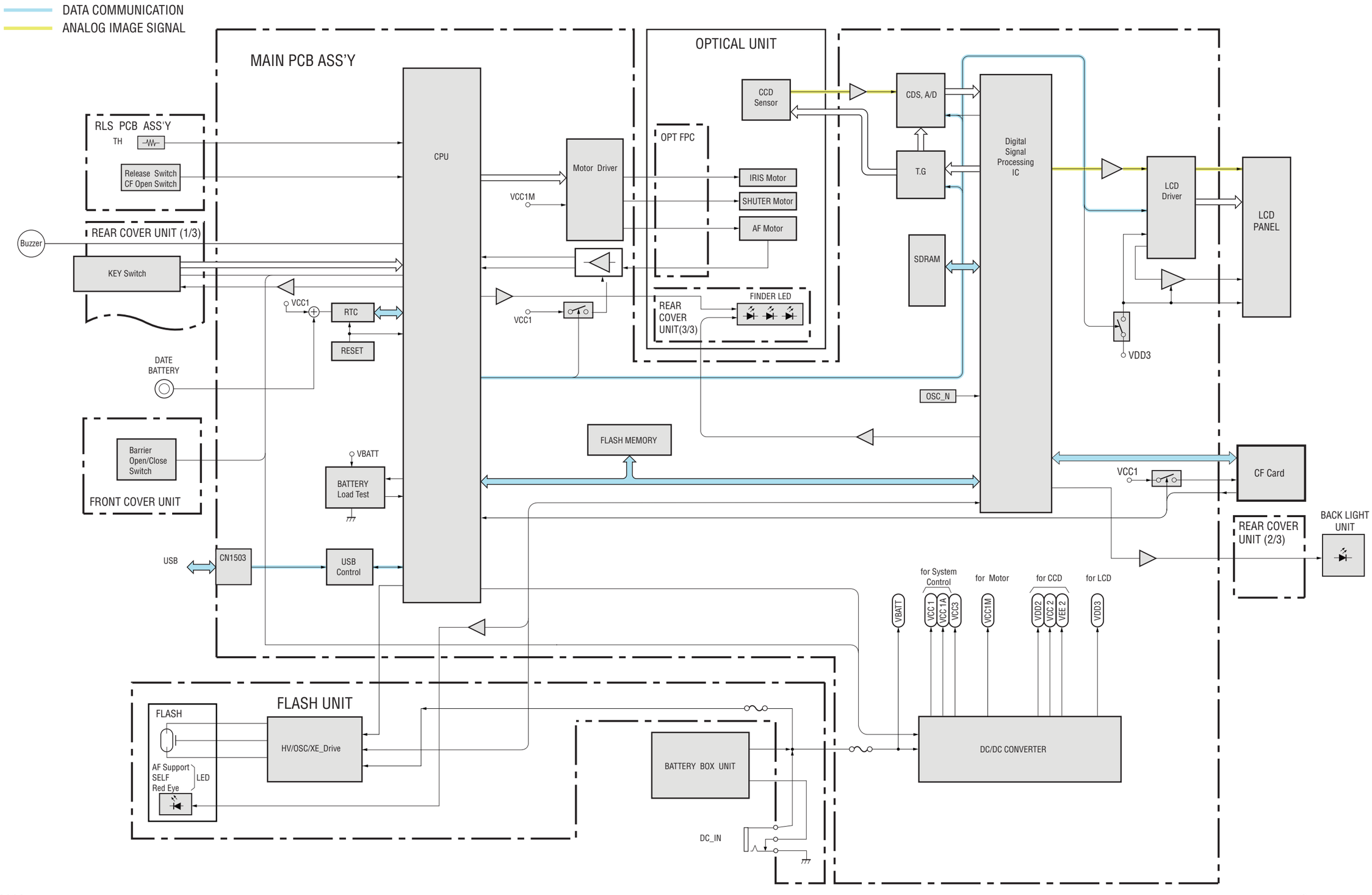
2. BLOCK DIAGRAMS

2.1 OVERALL



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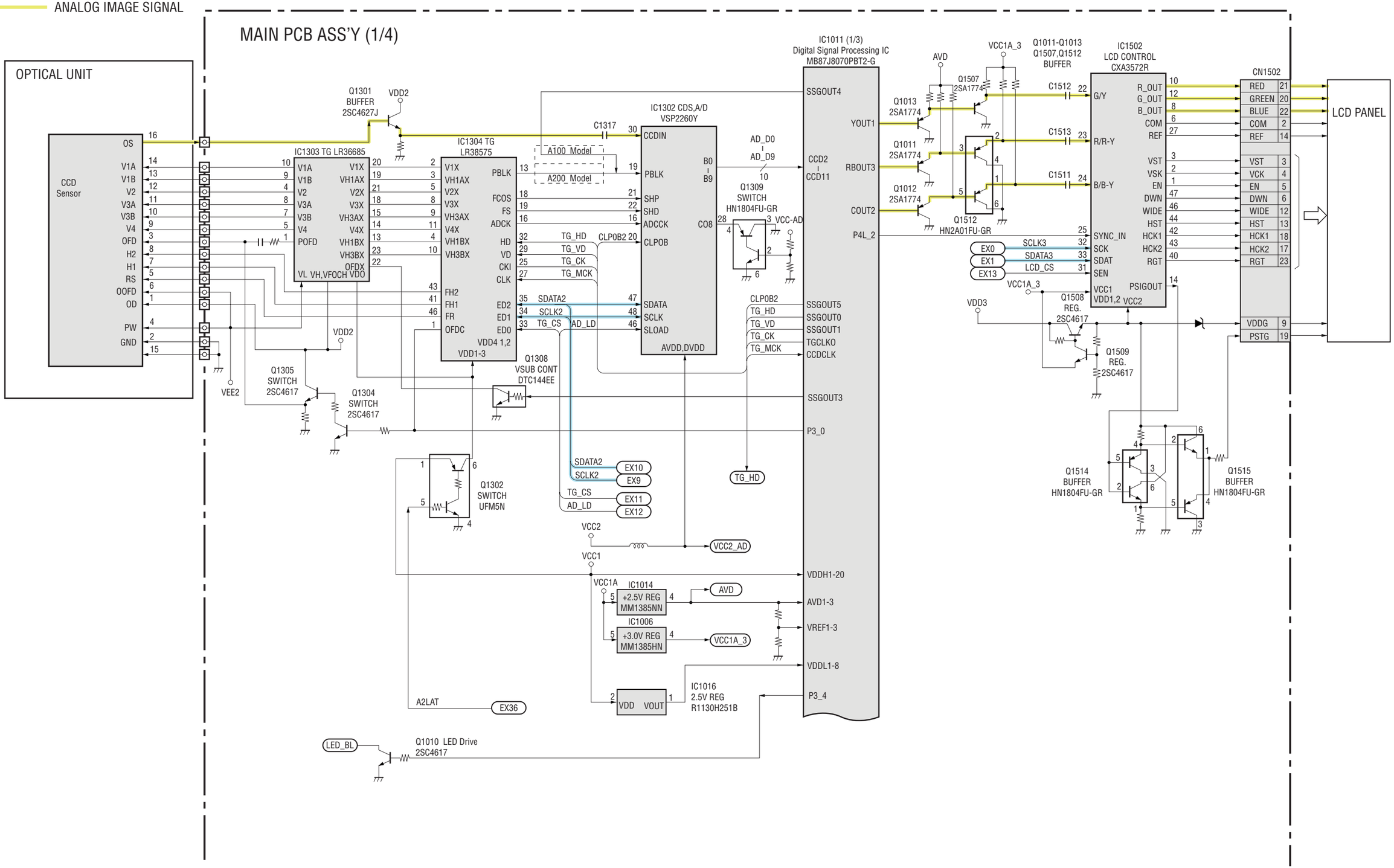
2.2 MAIN PCB ASS'Y (1/4)

DATA COMMUNICATION
ANALOG IMAGE SIGNAL



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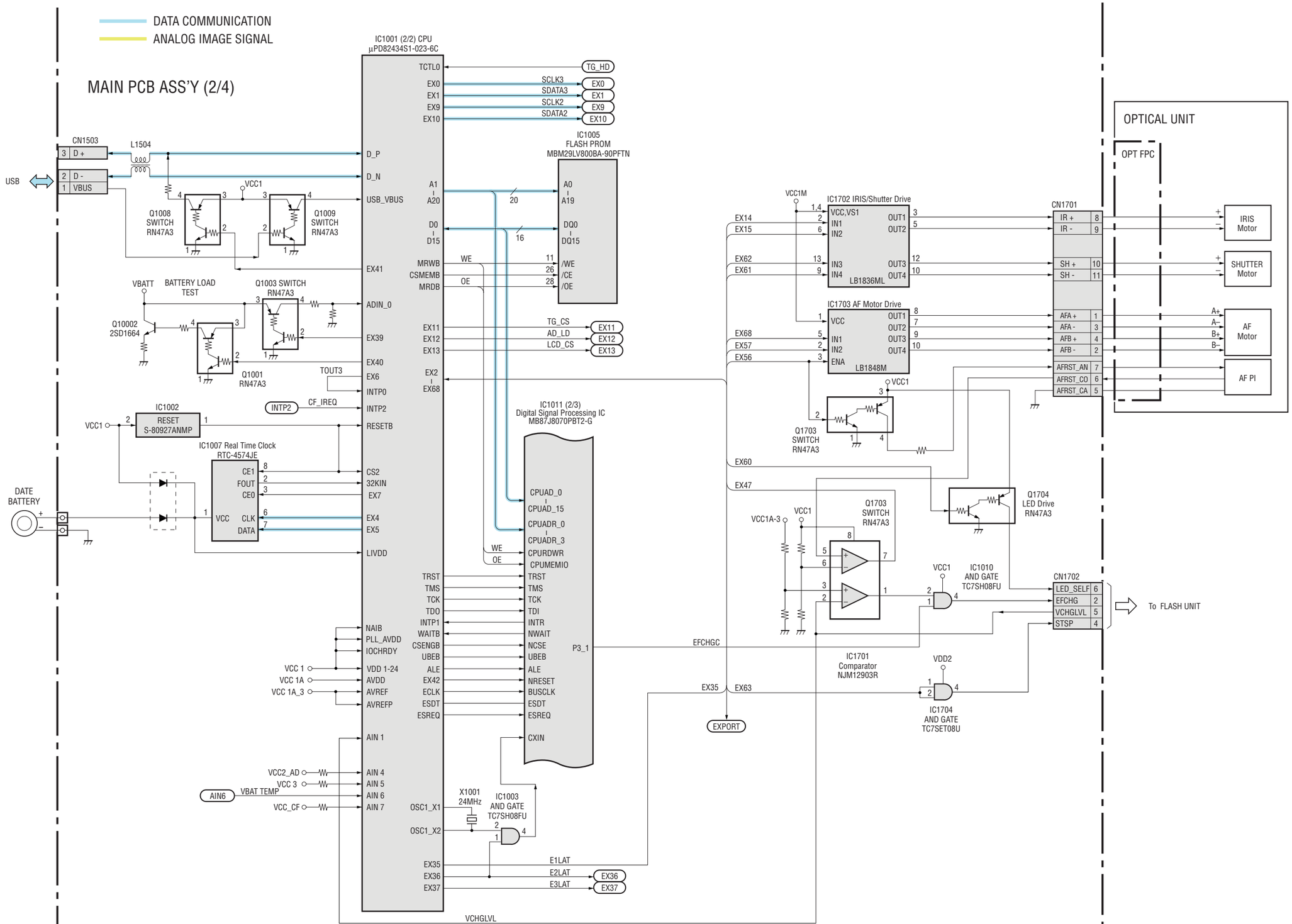
2.3 MAIN PCB ASS'Y (2/4)



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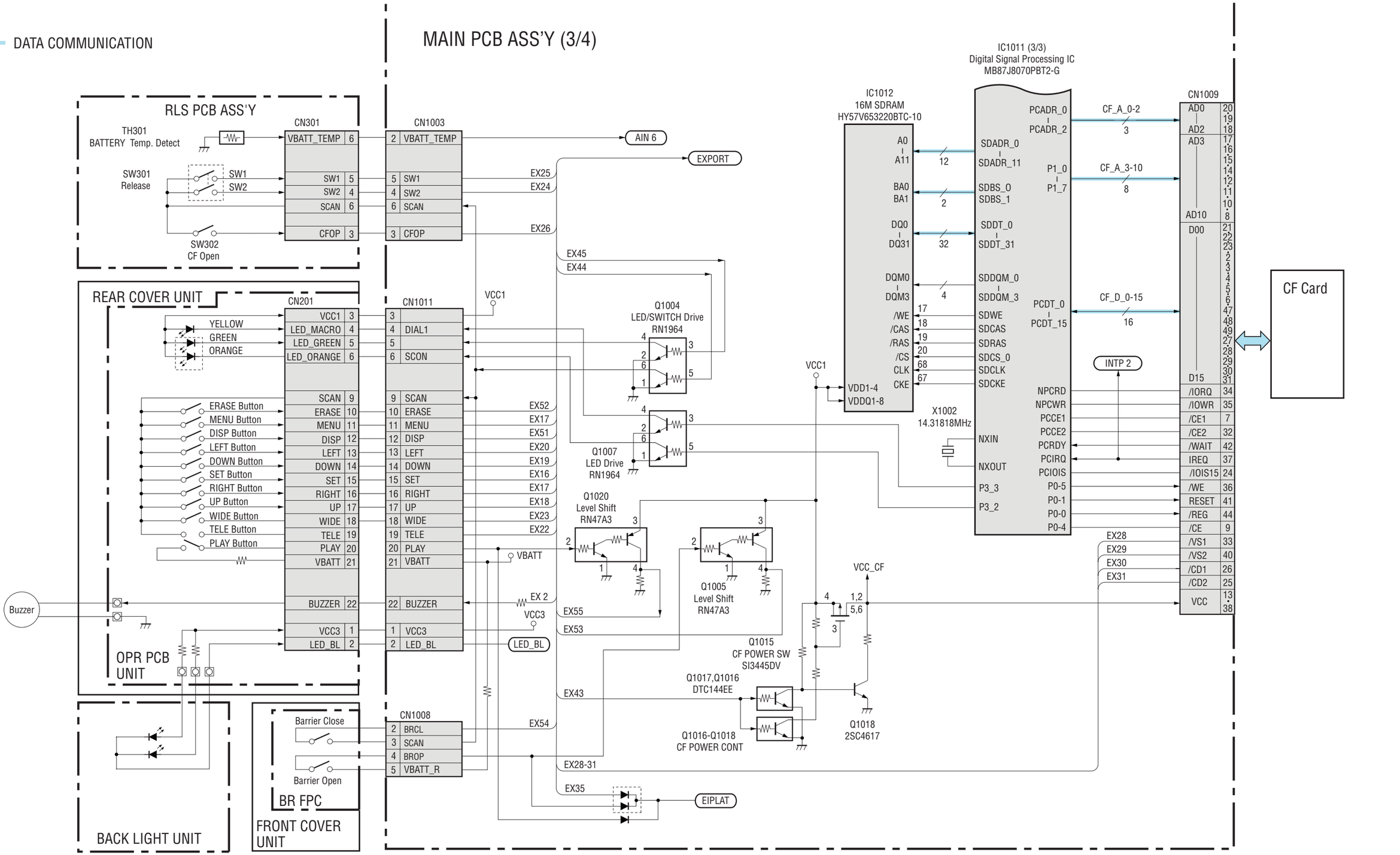

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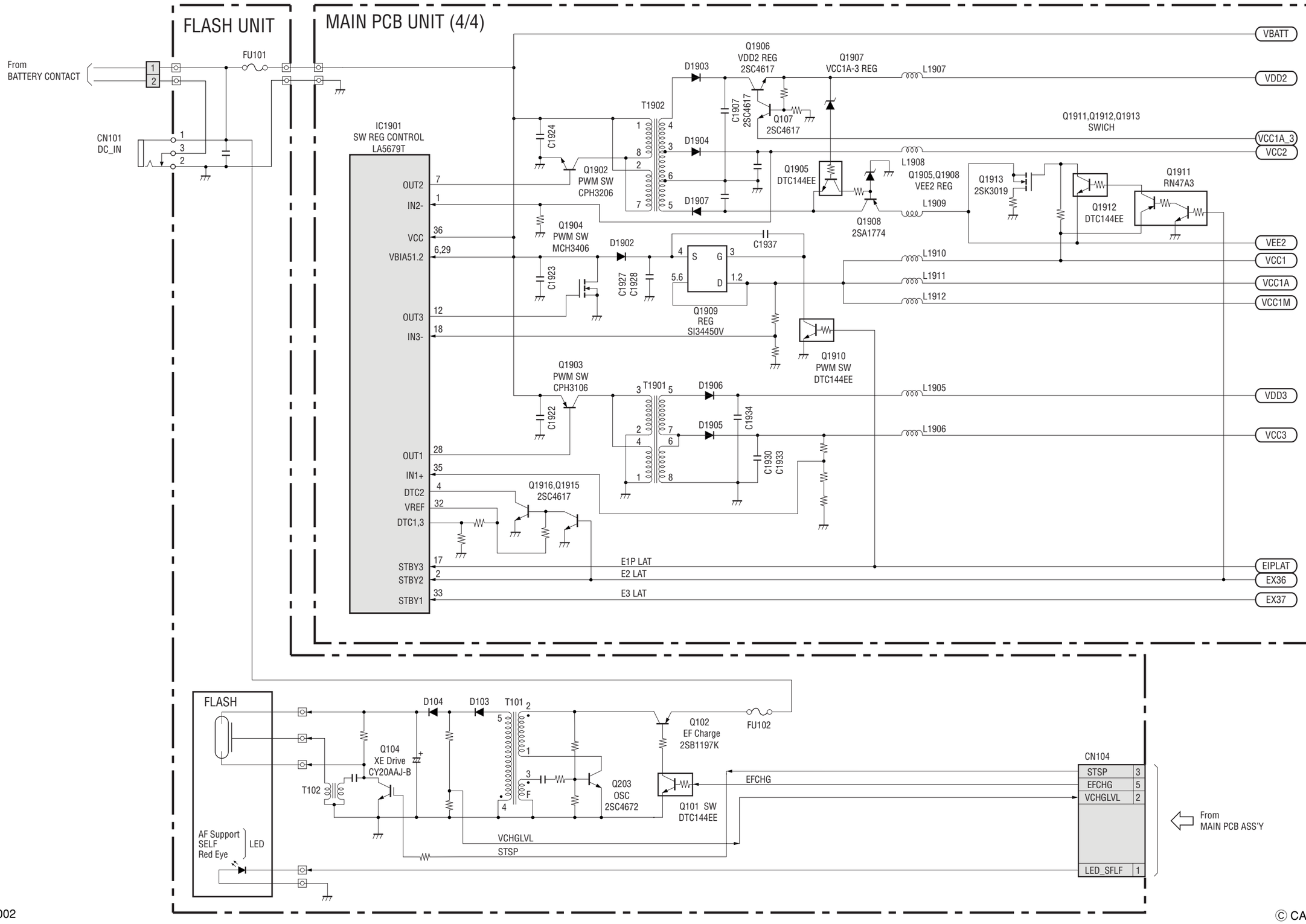
2.5 MAIN PCB ASS'Y (4/4)



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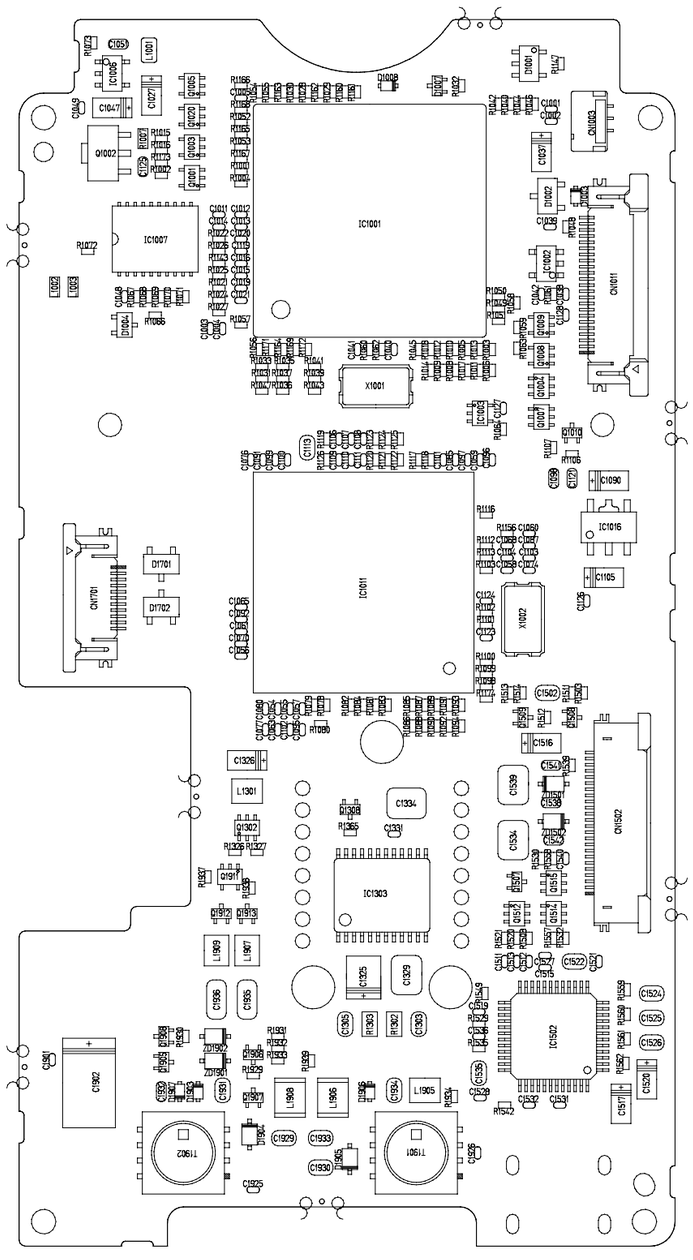
2.6 Abbreviation in Block Diagrams

Abbreviation	Nominal name	Description
ADC	Analog-to-Digital (A/D) Converter	
AE	Automatic Exposure control	
AF	Automatic Focussing control	
AND	Logic AND circuit	
R-Y/B-Y		Color difference signals of TV system
BPF	Band-Pass Filter	
BUFFER	Buffer circuit	
C	Chrominance signal	Color component signal of TV system
CCD	Charge-Coupled Device	CCD imager
CDS	Correlated Double Sampling system	
COMP.VIDEO	Composite video signal	
COMPARATOR	Voltage comparator	
CPU	Central Processing Unit	
DAC	Digital-to-Analog (D/A) Converter	
DRAM	Dynamic Random Access Memory	Memory with which read and write are freely possible.
DSP	Digital Signal Processing	Typically DSP device
EEPROM	Electrically Erasable PROM	PROM that is electrically erasable.
EVF	Electronic View Finder	
FET	Field Effect Transistor	
FLASH MEMORY		Non-volatile memory with which write and read are freely possible.
HPF	High-Pass Filter	
I/F	InterFace	The circuit that interconnects 2 devices or circuits.
IGBT	Insulated Gate Bipolar Transistor	Conductivity-modulation type FET transistor
INV.	Logic Inverter circuit	
IR	InfraRed ray	
IRIS	Iris	
LCD	Liquid Crystal Device	Typically LCD display
LED	Light Emitting Diode	Typically LED display
LPF	Low-Pass Filter	
NTSC	National Television System Committees	NTSC color TV system developed in USA
OP Amp	OPerational Amplifier	
OR	Logic OR circuit	
OSC	OSCillator	
PAL	Phase Alternating by Line	PAL color TV system developed in Germany
PLL	Phase Locked Loop	
PROM	Programmable Read Only Memory	Non-volatile memory in which program can be written.
PWM	Pulse Width Modulation	
REG.	REGulated power supply	
RTC	Real Time Clock	Reference clock oscillator
SDRAM	Synchronous Dynamic RAM	DRAM whose bus interface is synchronous.
SECAM	SEquential Colour À Mémoire	SECAM color TV system developed in France
SW REG	SWitching REGulator	Switching type regulated power supply device
TG	Timing Generator	
USB	Universal Serial Bus	USB type serial data communication system
VCO	Voltage Controlled Oscillator	
VCXO	Voltage Controlled X'tal Oscillator	
XE	Xenon Tube	
Y	Y-signal	Luminance component signal of TV system

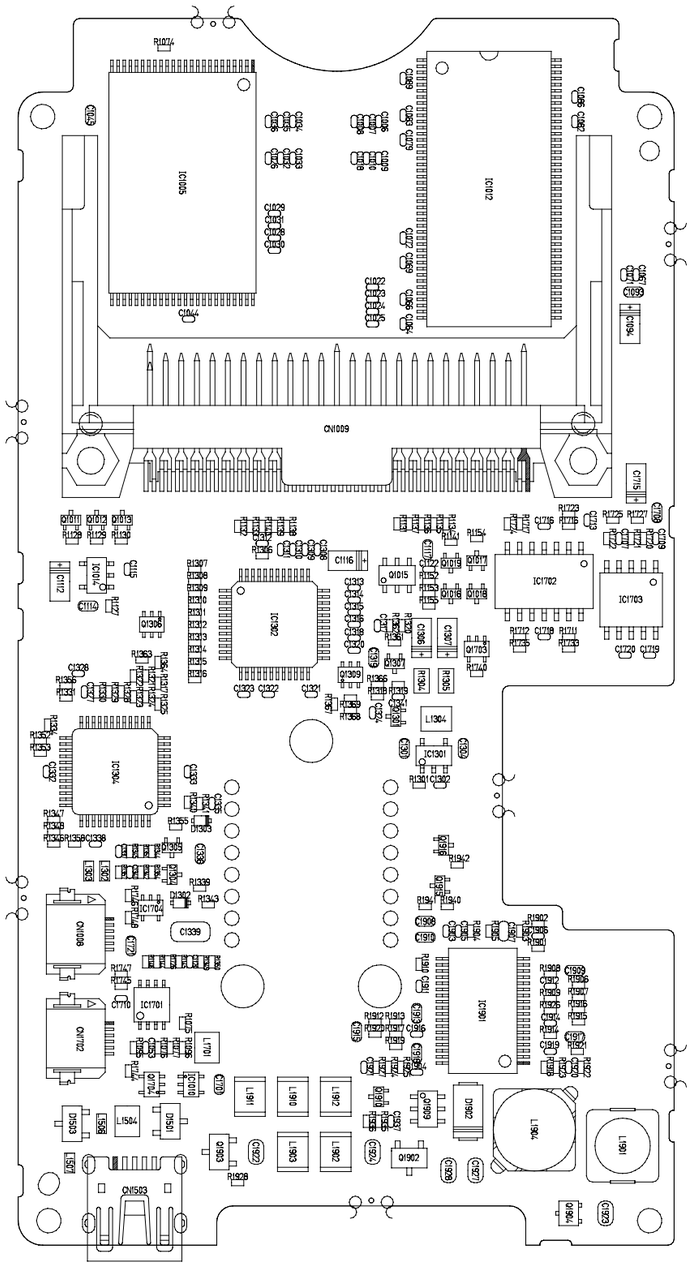
3. P.C.B. DIAGRAMS

3.1 MAIN PCB ASS'Y

MAIN PCB ASS'Y (SOLDERING SIDE)



MAIN PCB ASS'Y (COMPONENT SIDE)



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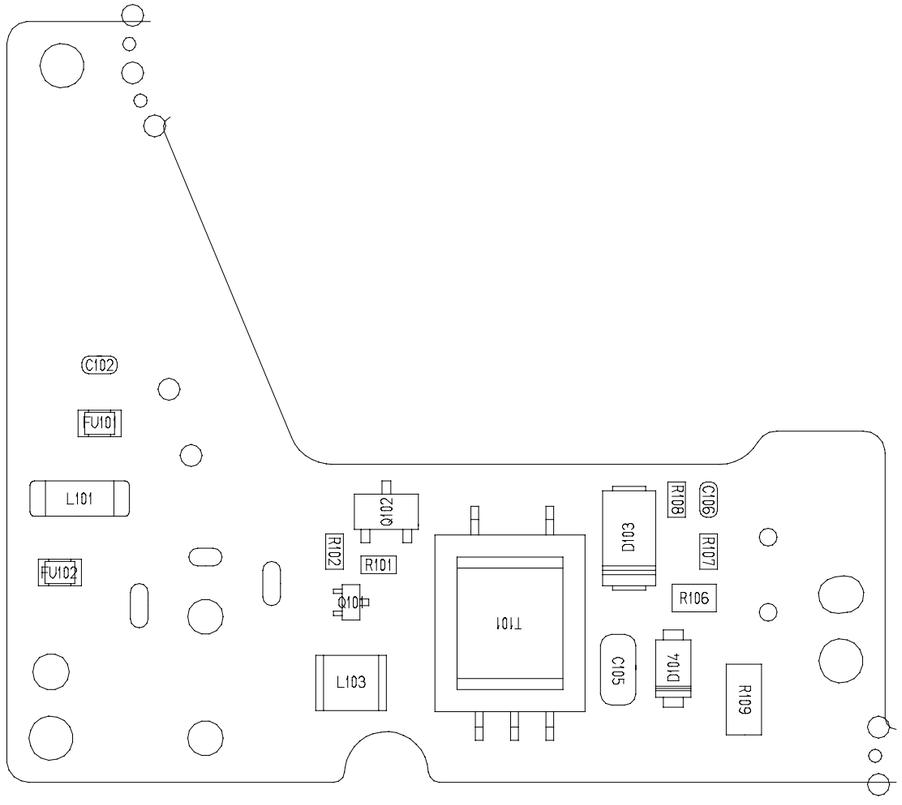
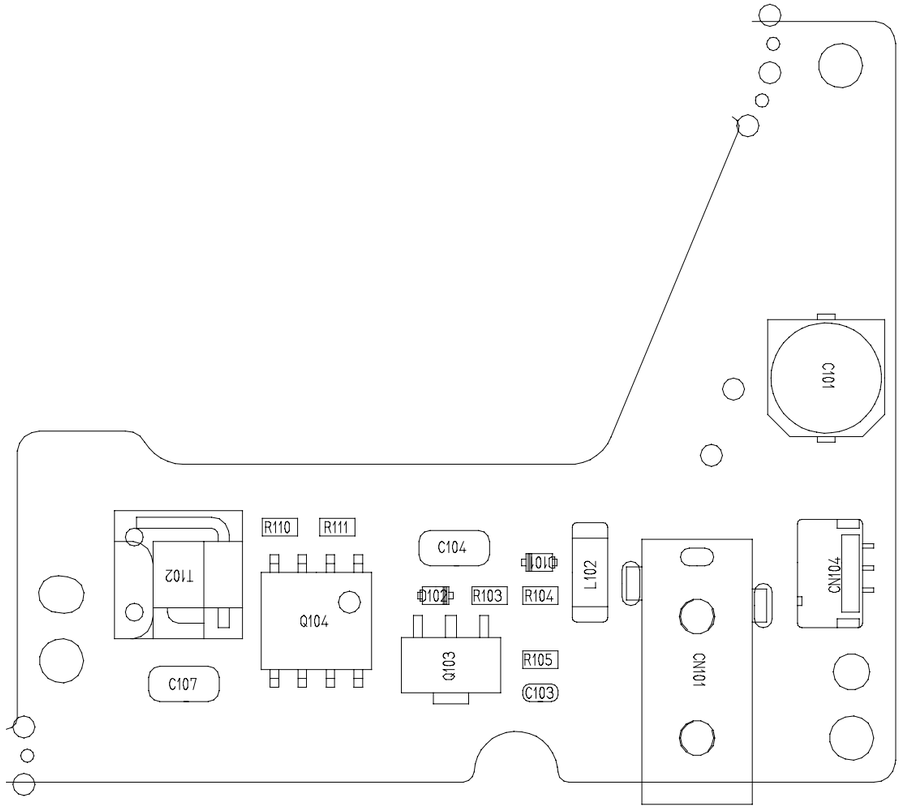
FLASH PCB ASS'Y (SOLDERING SIDE)



FLASH PCB ASS'Y (COMPONENT SIDE)



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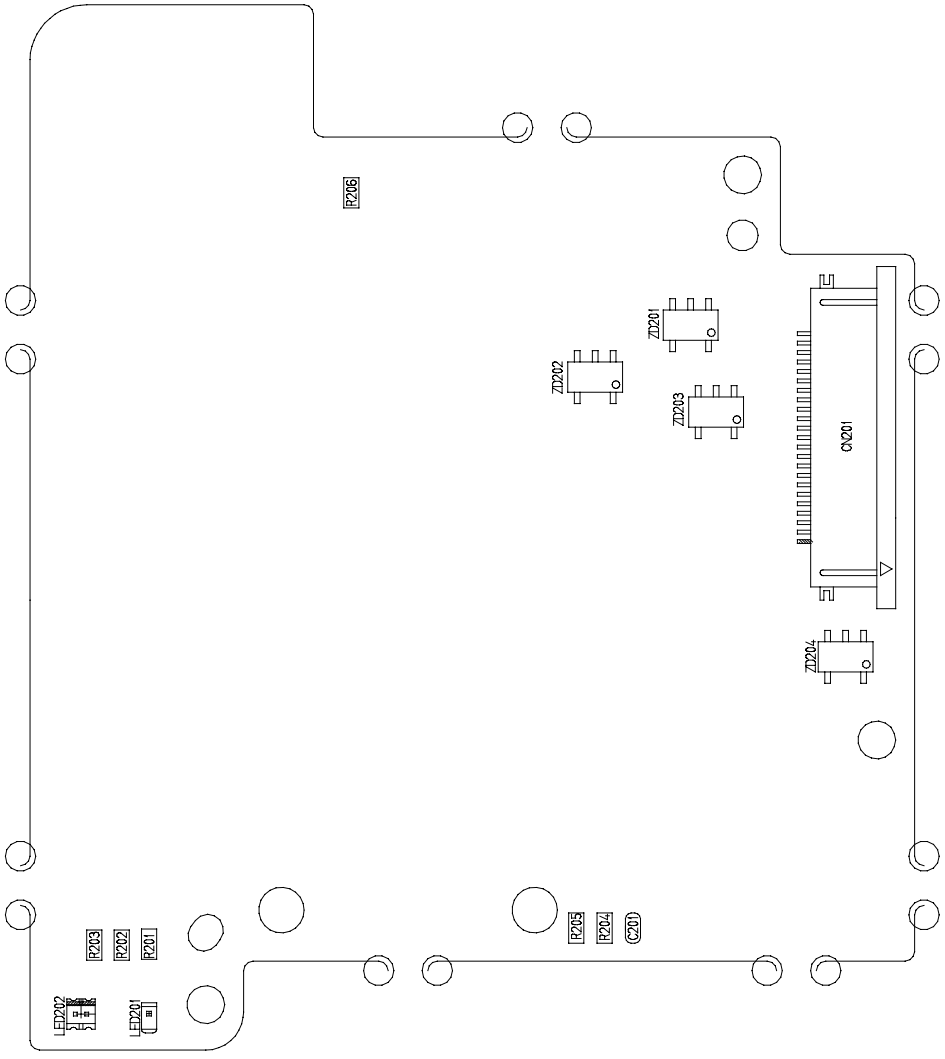
3.3 OPR PCB ASS'Y



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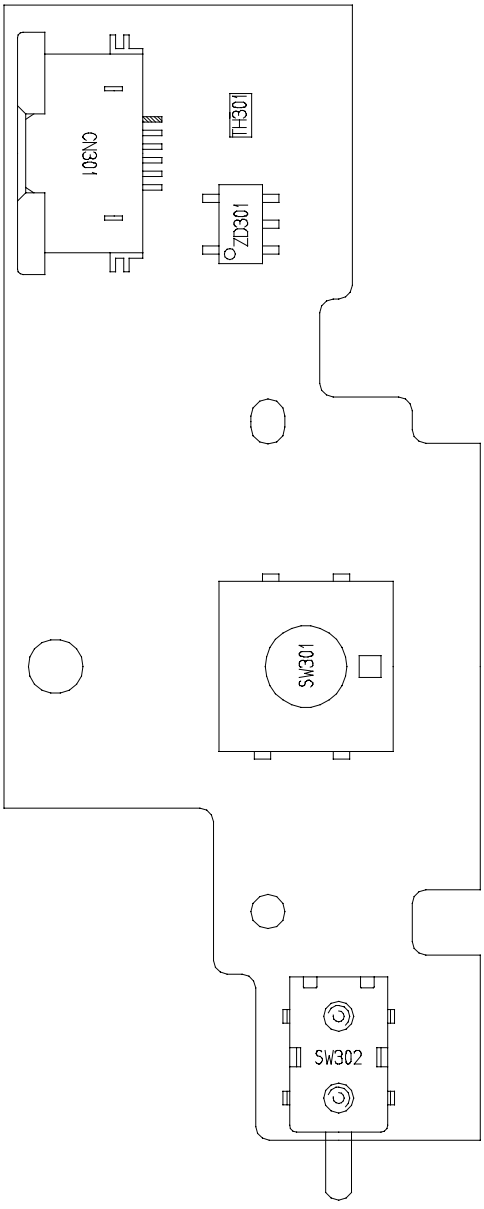
3.4 RLS PCB ASS'Y



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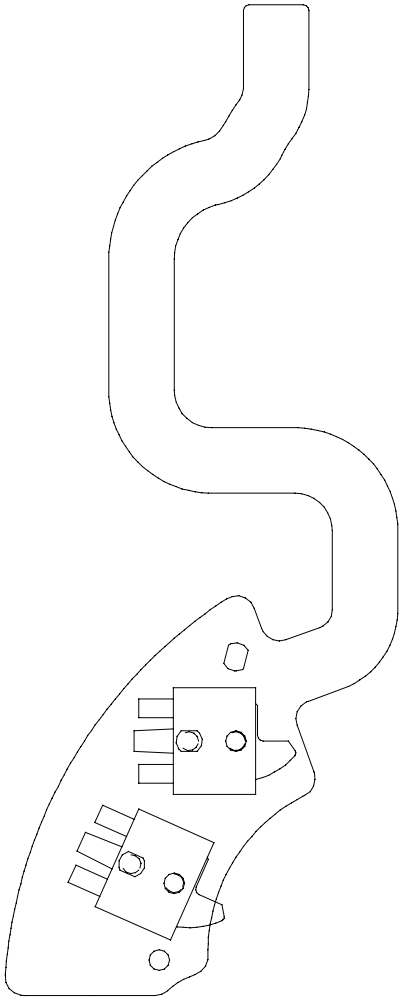
3.5 BL FPC ASS'Y



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How to print out the AF Chart

The large materials such as “AF Chart” that occupy a page of large size, can be divided into several smaller pages using “Graphic Select Tool” for printing the entire page.

< Procedures >

1. Select “ Text Select Tool” from the Command Bar and keep pressing it.

   Then, select the “ Graphic Select Tool”.

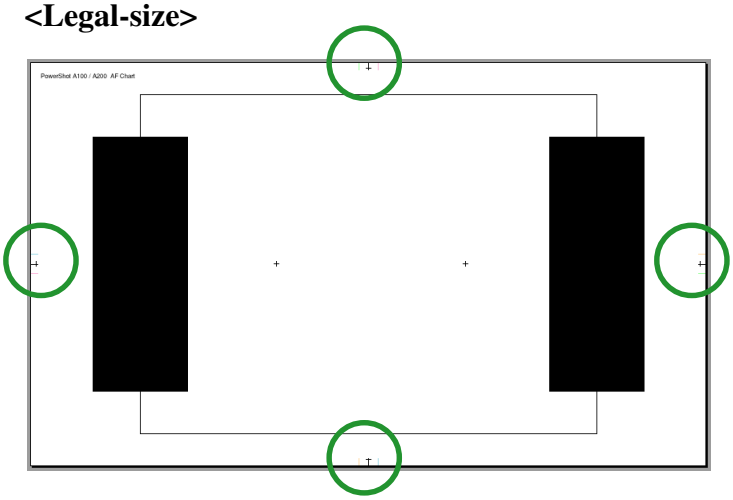
2. Select the desired portion to print. (Drag the cursor on desired area.)
3. Click “Print” of the Menu Bar. Check “Selected Thumbnails/Graphic”, then start printing.
   When you check “Fit to Page”, the date can be reduced or enlarged of its printing size so that the printing size fits the size of paper.*
4. To cancel the printing area, click an arbitrary position on the display.

*** Remarks**

The “AF Chart” of the Service Manual that is saved in this CD-ROM, has the colored markings in colors so that the entire page can be divided into print papers (legal-size x 4 pages, A3 size x 3 pages). Operate as follows.

Select “Graphic Select Tool”. Select the 2 markings having the same color to select the first printing area. Press “Print” to print the first printing area. Perform the above steps 2 and 3. Select another 2 markings having the second color to select the second printing area. Press “Print” to print the second printing area. Repeat this procedure until the all pages are printed.

<Legal-size>



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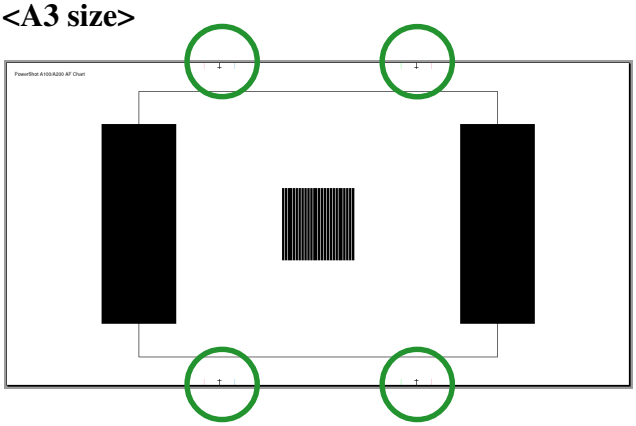
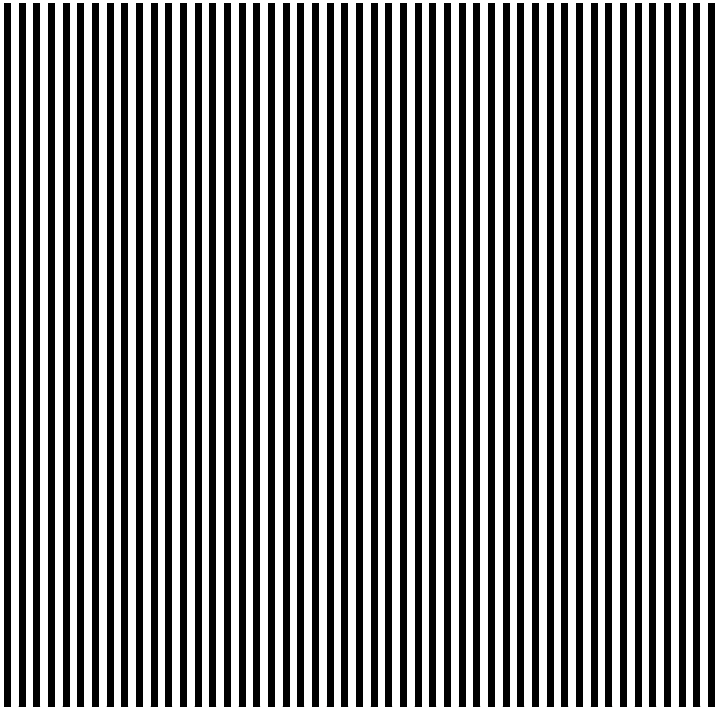
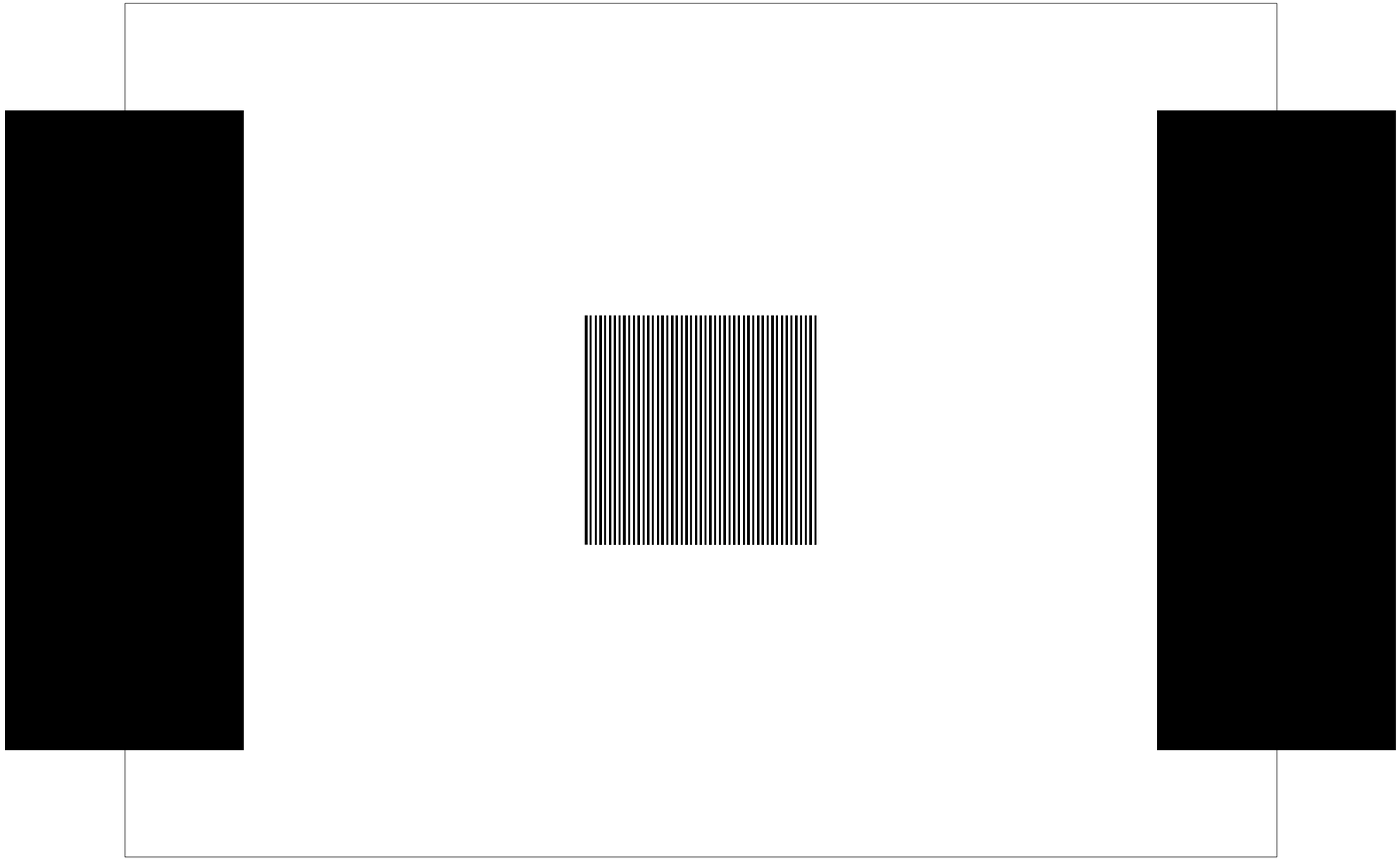


○: Markings

PowerShot A100 / A200 AF Chart



PowerShot A100/A200 AF Chart



Dimensions